

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE

MISCELLANEOUS PUBLICATION No. 73

WASHINGTON, D. C.

FEBRUARY, 1930

THE AGRICULTURAL OUTLOOK FOR 1930

Prepared by the Staff of the Bureau of Agricultural Economics

Assisted by Representatives of the Agricultural Colleges and Extension Services
and the Federal Farm Board

CONTENTS

Page		Page		Page		
	Value and use of the outlook report.....	1	Beef cattle.....	21	Lettuce.....	45
	General agricultural outlook.....	2	Hogs.....	23	Tomatoes.....	46
	Domestic demand.....	6	Dairy products.....	26	Onions.....	47
	Foreign competition and demand.....	8	Sheep and wool.....	29	Citrus fruits.....	48
	Agricultural credit.....	10	Mohair.....	33	Apples.....	49
	Farm labor, equipment, and fertilizer.....	11	Horses and mules.....	33	Peaches.....	51
	Cotton.....	12	Poultry and eggs.....	34	Grapes.....	53
	Wheat and rye.....	13	Turkeys.....	37	Strawberries.....	54
	Flax.....	16	Feed crops and livestock.....	38	Cantaloupes.....	55
	Rice.....	17	Hay.....	39	Watermelons.....	55
	Oats.....	18	Broomcorn.....	40	Peanuts.....	56
	Barley.....	19	Feedstuffs.....	40	Pecans.....	57
	Corn.....	19	Potatoes.....	42	Clover and alfalfa seed.....	58
			Sweetpotatoes.....	43	Tobacco.....	59
			Dry beans.....	43	Sugar.....	63
			Cabbage.....	44	Honey.....	64

VALUE AND USE OF THE OUTLOOK REPORT

Improved farm income requires planned production and effective marketing.

* * * Wise production planning must precede effective marketing. * * *

The surest way to control an oppressive surplus is to prevent it. No marketing machinery can insure good prices and satisfactory income if the farmer plants and breeds unwisely. The day is past when farmers can safely plan on the basis of current or last year's prices or on guesses about the future. Planting and breeding operations should rest on the best possible size-up of the market outlook at home and abroad for a year or more to come. Such an appraisal is given in the Outlook Report. * * *

The Federal Farm Board heartily commends this service to the farmers of the country and believes that it will contribute largely to increasingly intelligent farming operations and toward larger farm incomes.

—Statement by Federal Farm Board, January 29, 1930.

In this report the world-wide and nation-wide supply, demand, and price facts, which are not readily available to farmers, have been assembled. Effort has been made to show as nearly as possible the probable trend of conditions toward the time when the products of the next season's operations will be marketed. These statements represent the national viewpoint; they may have to be modified in view of unforeseen changes and should be adapted to peculiar local conditions.

These reports are not designed to tell individual farmers what to do, but to give them the basic facts upon which to make intelligent decisions in view of their local conditions.

This is the eighth annual agricultural outlook report prepared by the staff of the Bureau of Agricultural Economics, assisted by representatives of other bureaus of the department and by representatives of the agricultural colleges, experiment stations, and extension forces of various States. This year 44 States participated in the conference in Washington at the time the report was prepared and representatives of the Federal Farm Board were present.

State and regional outlook reports are being prepared by nearly all of the States to interpret the facts of this Federal report in terms of the needs of the farmers of these respective States. Any farmer who receives a copy of this report is urged to secure also a copy of the report distributed by his State extension service and consider its recommendations in connection with those made herein. Meetings will be held by county agents in hundreds of localities to discuss spring plans for the locality in view of the conditions stated in the following report.

GENERAL AGRICULTURAL OUTLOOK

IMMEDIATE OUTLOOK

Income from the farm products of 1930 does not now appear likely to exceed that from the products of 1929. Although the volume of agricultural production in 1930 can not now be indicated with a great deal of certainty, crop yields are likely to be larger than in 1929, when they were generally below average, whereas livestock production, in the aggregate, is likely to show little change. Larger production in itself would ordinarily tend to lower the level of prices received by producers, but improvement in business conditions over the present may tend to offset in part the influence of increased output.

With the purchasing power of consumers in 1930 reduced somewhat below 1929, farmers need to follow a rather conservative production policy. This is a year when it is particularly desirable for each farmer to estimate his probable income, in view of the price outlook for each of his products, and to plan his production expenditures accordingly. Farmers who are planning necessary permanent improvements such as buildings, fences, ditches, or orchards may find 1930 an opportune time for procuring labor and supplies at somewhat reduced cost.

LONG-TIME OUTLOOK

No material change from recent levels of total farm income seems in prospect in the next few years. However, the long-time tendency for prices of agricultural products to advance in relation to prices of nonagricultural products will probably continue. During the period 1921 to 1925 prices of farm products advanced, whereas prices of nonagricultural products have tended to decline throughout the period since 1922. During the next five years, however, increased production of livestock and livestock products, and increasing foreign competition, will tend to check the long-time tendency.

Farm income recovered considerably from 1921 to 1925, and has shown no upward tendency since then. The higher level of income since 1925 has somewhat improved the financial situation of farmers. Apparently land values have nearly ceased to decline, but there is no assurance as yet that a stable level has been reached in all States. Farm-mortgage debt appears to have reached its peak in 1928 and to be starting a gradual decline. Taxes paid by farmers have continued to mount, but with a much slower rate of increase in the last five years than in the preceding decade. Technical changes are also taking place with the rapid introduction of power machinery and the trend toward less labor and larger farms. These changes are increasing capital requirements and lowering expenses per unit of product for farmers in favorable locations, and will continue to render still more difficult the situation of farmers in so-called "submarginal" areas, and to release still more land for the production of human food instead of feed for draft animals. As a consequence of continued unfavorable incomes and of the general displacement of labor by machines, farm population has continued to decrease to the lowest point since 1900. During recent years, however, the net migration from country to city seems to have been reduced.

The financial status of agriculture has become much more stabilized during the past five years. Land values, as shown by data for the year ended in March, 1929, the latest available, have continued in the downward trend of

recent years, but the declines on the whole were comparatively slight—in few States exceeding 1 per cent. Fewer foreclosures and other forced transfers appear to have occurred. Bankruptcies involving farmers declined. Although considerable progress in adjustment to the post-war conditions has been made, the readjustment can not yet be said to have reached completion. There is no assurance, for example, that values have fully reached bottom in all States. The foreclosure rate is still high, with many localities continuing to report that forced sales constitute the bulk of land transfers, and that an appreciable amount of excessive indebtedness remains to be adjusted. The farm-bankruptcy rate still is about six times the pre-war experience. The annual rate of change in the ownership of farms from willing seller to willing buyer remains comparatively low. Nevertheless, recent indications support the view that for some time to come changes in farm real estate values may be comparatively slow in movement and small in extent.

Total farm-mortgage indebtedness appears to have reached at least a temporary peak and may be expected to decline somewhat during the next few years. The total increased 118 per cent from 1910 to 1920, 19 per cent from 1920 to 1925, and 1 per cent from 1925 to 1928. Since 1928, total outstanding loans of the principal lending agencies have shown a slight net reduction.

Several factors have tended to check the upward trend and to reduce the total of farm-mortgage debt: Completion of most of the funding of short-term debt into mortgage debt by 1925; reduction in the number of voluntary land transfers; decline in land values, and on mortgaged farms, a resulting rise in the average ratio of debt to value to a point approaching customary loan limits; extinguishment of debt by foreclosures and liquidation of mortgaged-land holdings; increased use of amortization and other partial-payment plans; and some retirement of loans from farm earnings. Rising interest rates in 1928 and especially in 1929 restricted the supply of funds available for farm mortgages. The lower interest rates now in prospect, together with a probable increased expenditure for machinery and equipment, voluntary transfer of farms, and other factors tending toward an increase, are not expected to have sufficient effect on mortgage borrowing to offset the influence of the factors tending toward reduction in total mortgage debt.

Taxes on farm property in the United States as a whole may be expected to increase for some time, although it appears certain that the rate of increase will be less than the average rate since 1913. Estimated average taxes per acre of farm real estate increased 134 per cent from 1913 to 1924, principally because of increased expenditures for schools and roads. By 1928 taxes per acre had advanced to 146 per cent above the 1913 level. It is most unlikely that there will be a sufficient abatement in the demand for public improvements and services to permit a general reduction in State and local expenditures. Taxes on farm property will not decline and probably will continue to increase unless the several States should (1) provide more effective control over the tendency of expenditures to increase and (2) revise further their systems of taxation so that a substantially greater share of the necessary expenditures would be met by revenues derived from sources other than general property. Past experience indicates that progress along these lines will be slow unless there should develop an unusually strong demand for practical and far-reaching improvements in State and local finance.

Rapid changes in farm production practices during the last decade have introduced new features into the agricultural situation. There seems little doubt but that the rapid development and adoption of improved farm machinery, particularly the all-purpose tractor and the variety of new cultivating and harvesting equipment associated therewith, will continue.

This will tend toward reduction of the farm-labor forces formerly required; toward enlargement of the size of farm; toward further reduction of the number of horses and mules; and toward release for other purposes of further acreages of crop and pasture land formerly required for feed for horses and mules. Further expansion of agriculture into the subhumid grazing area of the Great Plains probably will be stimulated. Milk and meat production may tend to become still further concentrated on the more fertile and level lands of the North and West. The situation of farmers in the rough or sandy areas of the country or on submarginal lands in general may be made even more difficult. In the case of cotton, improved mechanical methods now in use and others in process of development, and possible further expansion

in the western sections of the Cotton Belt formerly considered unsuited to cotton, may raise a problem for lands not well adapted to machine handling.

Both the unfavorable farm economic situation and the changes in production methods have affected farm population which at the beginning of 1929 was the smallest in 20 years—probably in 30 years. The decline has continued throughout the recent recovery in agricultural incomes from the low point of 1921 and 1922. The net annual movement from farm to cities was reduced slightly during 1927 and 1928, being 604,000 and 598,000 persons, respectively, as compared with 1,020,000 in 1926 and 834,000 during 1925. Further readjustments may be necessary before the annual movement to the city will be reduced to more stable proportions.

The outlook for the next few years may be judged from the changes that have been taking place in demand and in supply. Demand for American farm products increased about 10 per cent between 1919 and 1926, and has shown but little increase since them. The uncertain European demand situation and increasing foreign competition makes it doubtful if any upward turn in demand for our farm products can be expected in the immediate future.

Agricultural production, particularly of meat animals, is likely to show material increases in the next few years. Following the dark days of the deflation period, poultry, dairy, and meat production increased rapidly to 1924, then increased less rapidly as the upturn of the beef-price cycle set in. Meanwhile, grain crops decreased somewhat, but during the last few years apparently became stabilized on a level still high enough to hold feed crop prices at low levels compared with livestock. Commercial truck-crop production has nearly doubled during the past decade, and fruits and vegetables have increased by one-third.

Prospective increases in beef cattle and dairy production during the next five years, with little prospect of compensating increases in demand, will tend to depress rather than raise gross income to farmers. The upward trend of demand for specialty truck crops, fruits and vegetables, and flue-cured tobacco, will probably continue, but the favorable effect of these factors has been partially offset during recent years by the failure of world demand for cotton to maintain its former upward trend, and by competition from increasing foreign production, in the markets for our wheat, hogs, and wool.

During the last 10 years the price level of nonagricultural products has gradually tended downward whereas the price level of agricultural products has gradually risen. This appears to mark a reappearance of the long-time tendency in evidence during the period 1890 to 1915, during which the agricultural price level rose at a more marked rate than the prices of other products. During the last four years there has been a downward trend in the general level of commodity prices due largely to the downward tendency in nonagricultural prices. This tendency in general price level may continue during the next decade. In view of the probability that the more rapid increase in industrial production than in agricultural production is likely to continue, a continuation of the upward trend in the exchange value of farm products for nonagricultural products may be expected. However, for the next few years the downward tendency in livestock prices may prevent the immediate reappearance of these underlying trends.

In the long-time outlook the probable size of the population of the future is an important consideration as to the farm land needed to meet the demand for American farm products. Recent disclosures of a very marked decline in the birth rates in important countries of the world including the United States suggest that the total population no longer can be counted upon to continue increasing in the future as steadily as it has in past decades. Assuming no change in our immigration laws, a stationary population according to some estimates may be reached in the United States within 30 years. This prospect taken together with recent indicated improvements in agricultural efficiency and notable changes in the consumption of foods and fibers suggests that, considering the nation as a whole, there is little likelihood of needing to enlarge our total farm-land area during the next few years. Continued extension of our crop area into lands now found profitable to cultivate under the new methods, principally in the Great Plains region and the Northwest, probably will be offset by reductions of crop acreage elsewhere. Much of the 20,000,000 to 30,000,000 acres of plowland now lying idle in the Southern and Eastern States probably will not be needed for crops during the next few years.

NORTH AND EAST

In view of the pressure of supplies from all parts of the country on the consuming markets, farmers in the North and East, outside of the Corn Belt, face increased competition in virtually all lines. The natural advantages incidental to location provide a margin so slender that it may easily be offset by other factors. The long-time outlook for those farmers who develop production of the special qualities and varieties most preferred in the markets where they can sell to advantage, volume and price both considered, is by no means discouraging. General expansion in the near future, however, will probably not result in enhanced income. In areas in which returns have been consistently low, withdrawal from land in favor of forest or recreational use should not be postponed in hope of better farming conditions in the near future. Closer attention should be directed to the possibility that, for many farmers, larger volume even at a lower price may mean more net income.

THE SOUTH

Cotton production has continued to shift westward and northward and has been meeting increasing foreign competition. The shift has been due in part to the fact that the boll weevil has done less damage along the northern and western borders than in the central and southern parts of the Cotton Belt. The increasing expensiveness of labor encourages the use of more machinery and this tends to discourage cotton production in the eastern States of the Cotton Belt. Conditions in the Great Plains region and in the alluvial cotton lands along the Mississippi River are more suitable for expansion than in the eastern cotton States. Foreign competition has been increasing not only in volume of cotton production but also by improvement in quality of production in some foreign countries, particularly India.

In some areas, especially along the Atlantic coast and the Gulf border, a moderate development of specialized fruit and vegetable production may be a profitable alternative to cotton production. The growth of industrial cities in the eastern Cotton Belt and in the number of tourist spending winters in southern cities is expanding local markets for dairy and poultry products and vegetables. The growth of industrial cities in the North also furnishes an expanding market for early fruits and vegetables. Great care must be exercised, however, not to increase production more rapidly than the demand warrants. Early-vegetable producers are also meeting increasing competition with the products of Mexico and the West Indian islands. The opportunity for expanding many of the southern commercial crops, such as sugarcane, rice, peanuts, and other vegetable-oil-producing plants, is definitely limited by strong competition from foreign tropical and subtropical countries. Tobacco production however, may be expanded to some extent to meet the increasing demand for cigarettes, although undue expansion in the immediate future should be guarded against. Areas which have been unable to make satisfactory incomes from cash crops during recent years may well consider turning to more extensive uses, such as grazing lands, as there are no indications of a general improvement in the cash crop situation in the near future.

CORN BELT AREA

The mechanization of agriculture will undoubtedly make substantial progress in the Corn Belt area of this country during the next decade or two. The increased use of the general-purpose tractor, combine-harvester, and corn picker will tend to concentrate the production of corn on the more level land and in larger fields. Land less favorably situated will be devoted more and more to the use of pasture, and high-class forage crops, and may suffer in value in comparison with the more level lands. The further reduction in horses and mules during the next 10 years will release from 20,000,000 to 30,000,000 acres of crop land in this country for uses other than growing feed for work animals. Continued low prices of oats and a material decrease in oat acreage may be expected in the Corn Belt. The spread of the corn borer will tend to limit the growing of corn to such land as can be operated advantageously by mechanical power and expand the use of cornstalks for manufactured products. The increase in high-class pasture and forage will lay the foundation for expansion in cattle numbers. The immediate effect of present high prices of beef and low prices of butter will be to encourage production of beef cattle rather than

dairy. Within the next decade, however, lower prices for beef will induce many farmers to milk cows instead of raising calves and the dairy output will expand. The mechanization of agriculture and the increase in cattle raising will result in larger farming units and fewer farmers, especially in those sections which are not favorably located for the production of fluid milk or truck crops.

THE GREAT PLAINS

The Great Plains region, including all of the main spring and winter wheat belts, is now in process of major agricultural readjustment and development and will continue in this state during the years immediately ahead. It is sharing in the general westward shift of farm production which seems to have become a significant characteristic of American agriculture since the World War. Wheat production, stimulated by the tractor and combine, and by improved tillage methods, is encroaching on the cattle ranges, particularly in the winter-wheat area of the southern Plains; and this movement is likely to continue for several years. Dairying and hog raising, already well established in the eastern portion of the spring-wheat areas, are likely to grow still more important there during the next few years.

Wheat acreage expansion is going forward in the face of competition from many countries on a world market and with the possibility of a downward long-time trend of wheat prices. Against these factors are new implements, new production practices, and larger-scale operation, with consequent lower costs. The growing dairy and hog enterprises in the eastern portions of the northern Plains also face severe competition from the older producing areas to the east and south, many of which have more favorable economic conditions.

Undoubtedly these new developments mark progress. They should, however, be carried forward with caution, and farmers of this region should guard against unduly rapid and extreme developments involving heavy capital outlays, particularly in lines involving products of rather wide price variations. The danger of overcapitalization of unusual and short-time profits into unwarranted land values should be avoided.

THE WESTERN REGION

Developments in the western region within the next few years are not expected to display any extreme or widespread changes. Encroachments on the grazing area from large-scale grain production in States west of the Rocky Mountains has about reached its limit, and only minor shifts from sheep to cattle on the grazing lands may be expected. Further increase in specialized crops on the irrigated lands may be anticipated.

As to the grazing enterprise itself, only some slight further increase in the carrying capacity of the range may be realized through further improvement in grazing practice and control on the forest reserves and other public lands, and through the increased growing of supplementary feeds adjacent to the grazing grounds.

Cattle grazing is likely to suffer seriously within the next few years from expansion in the number of cattle, particularly in the Corn Belt. Range growers should guard against losses likely to result from making added capital investments in the cattle enterprise with a period of falling cattle prices not far away. Rather, a general effort at debt paying and holding the business to present proportions should be the objective.

The production of grain on the dry-farming land is changing, not only in the direction of expanded acreage but in the practices followed. The tractor is coming to replace horses as power for combines and tillage machinery. New rotations and tillage methods better adapted to local conditions are being adopted. In the extreme Northwest many of the dry-farming, as well as other farming, areas are dependent more largely on export trade for an outlet for farm products; hence farmers there should pay particular attention to foreign demand and competition.

DOMESTIC DEMAND

In view of the decline in domestic business activity from the high level attained in the summer of 1929 to the low level prevailing at present, the remainder of the 1929 production will be marketed under domestic-demand conditions materially less favorable than those of the first part of the season.

The domestic market may improve later in the year, but it is not likely that the demand for farm products in the summer and fall of 1930 will be as good as that which prevailed during the summer and fall of 1929. It is quite probable that during the first half of 1931 the demand for farm products will be materially better than it now promises to be during the first half of 1930, but it is doubtful if it will reach the high level of demand that prevailed during the first half of 1929.

The decline in industrial activity, employment, and pay rolls since last June has been of sufficient proportion to affect the demand for some farm products. The commodities which thus far have shown the effects of the decline in domestic demand most noticeably are butter, cotton, and wool; while apples, potatoes, and grains are reflecting lowered demand in their failure, so far, to make the usual seasonal price advances. Consequently the money incomes from current farm marketings are not as good as anticipated earlier in the season.

In appraising the domestic market that is likely to prevail during the 1929-30 season, it is necessary to observe the following outstanding facts in the industrial and financial developments of 1929. The summer months of 1929 marked the end of the period of business expansion which began in January, 1928, and showed itself most noticeably in expansion in the automobile, iron and steel, and allied industries. The recession in industrial activity which began last summer has consequently been most marked at first in the automobile, iron and steel, and more recently in the textile and some other industries. There has also been a further decline in building construction, the present level being the farthest below trend since the early part of 1921. After the peak in industrial activity had been passed the security markets collapsed, which accelerated the downward trend in industrial activity in the last three months of 1929. A lowering of interest rates followed the decline in the stock market.

The business decline from June to December was more rapid than during any other recent business recession, industrial production having declined about 20 per cent, from 10 per cent above to 10 per cent below normal, during the 6-month period. In previous recessions the total decline in industrial production from high to low was 32 per cent from 1919 to 1920, 21 per cent from 1923 to 1924, and 12 per cent from 1926 to 1927; these declines extended over periods of 15, 14, and 14 months, respectively. The length of time it has taken to recover from previous recessions to normal again, after business has once fallen below normal, has varied from six months to two years. At present, industrial activity has been below normal since November, 1929. Some favorable signs are already appearing, such as an easing of credit conditions, and apparent slight recovery from the drastic curtailment of output in certain industries such as iron and steel, and automobiles, and the prospect of increased Federal and State construction work. During the last two months commodity prices have moved within a relatively narrow range following a decline of approximately 5 per cent during the preceding four months.

These facts, and others available, do not as yet indicate definitely whether the turn has come. Although it is possible that there may be a temporary recovery followed by a further decline, it is also possible that the recession may continue for several months more, though with a slower rate of decline, or the bottom may already have been reached.

Some indication as to future domestic demand prospects may be obtained from the tendencies in earlier recession periods, but there are some important differences. The recession during 1927 and the present one are both related to the automobile industry, but it should be observed that the curtailed output since June, 1929, resulted partly from previous overexpansion and partly from the uncertainties created by the great decline in security prices, whereas in 1927 the curtailment was brought about largely by the temporary cessation of Ford production. Credit conditions in 1929 were characterized by relatively high interest rates as was the case in 1920 and 1923, the rates being somewhat lower than in 1919 and slightly higher than in 1923. In 1929 the credit stringency was due primarily to marked speculative inflation in security prices, whereas in the earlier periods, prices of commodities as well as stocks had been advancing rapidly. Except in the automobile-industry inventories of industrial products were not generally high in 1929, in contrast to the large inventories in 1919 and in 1923.

Taking into account the greater stability in commodity prices, lower inventories, and better credit conditions prevailing at present compared with those in other recession periods, it is not generally expected that the present decline

will develop into a business depression as serious as that of 1920-21, and although the early months of 1930 are likely to show a relatively low level of industrial activity, the latter part of the year should show an improvement continuing into 1931.

FOREIGN COMPETITION AND DEMAND

Despite the increasing foreign competition, the foreign demand for our agricultural products of 1930 is likely to be better on the whole than during the rather depressed situation encountered abroad by our products of 1929. In the first half of the 1930-31 marketing season, foreign demand may be less than it was for the first half of the 1929-30 season, but is likely to improve as the season advances and be considerably better during the last half of the 1930-31 season than in the corresponding period of the present season.

In view of the easier international money situation, prospects are for some improvement in economic conditions and purchasing power in Germany and Great Britain by the end of 1930; this should tend to offset any slackening in demand that may take place in other foreign markets. The competition to be met by American agriculture as a whole from foreign production will probably be somewhat greater during the 1930-31 season than in 1929-30. More competition may be expected from foreign production of wheat, corn, flaxseed, and pork products, and less from tobacco, sugar, and apples. Little change is to be anticipated in the competition from foreign dairy products and wool.

Economic conditions are at present somewhat depressed in most of our leading foreign markets. In the principal European countries, notably Great Britain and Germany, this depression is to be associated with the increasing tightness of money that prevailed during the first three quarters of 1929 accompanying the high interest rates in this country, which greatly reduced the outflow of American capital to Europe and caused a flow of funds to New York. These conditions have now changed. Interest rates have been reduced generally in Europe as well as in the United States, and prospects seem good for a renewal of the flow of American capital to Europe. The low point in the current business recession in Europe may not yet have been reached, but the change in the international-credit situation paves the way for improvement during the latter part of 1930. A factor unfavorable to the European situation is the current widespread depression in Latin American and other Southern Hemisphere countries, which are important markets for European industrial products. In most Latin-American countries this situation is largely the result of the prevailing low prices for coffee and sugar. The uncertain financial situation is a depressing factor in Argentina. Short wheat crops and low prices for butter and wool are reducing the purchasing power in Argentina, Australia, and New Zealand. In the Orient, economic conditions are also unfavorable, largely because of the decline in silver exchange in China and lower silk prices, with apparently less prospect of a definite improvement during this year.

In the United Kingdom, our largest market for agricultural products, the postwar readjustment in the fundamental economic situation has been disappointingly slow. Industrial activity has been generally below a satisfactory level and particularly so in textile manufacture. There has been a considerable shift in employment from older to newer industries and occupations, but this has not taken up all of the slack. Unemployment persists in large volume. Taking the year 1929 as a whole, unemployment was less than in 1928, but the high interest rates of last summer and early fall had a retarding influence on British industry, and unemployment increased toward the end of the year in spite of some improvement in the coal industry. The generally easier money conditions now prevailing, however, should have a stimulating effect, and it is possible that economic conditions in Great Britain during the 1930-31 marketing season may well be more favorable than during the present season.

In Germany, our second largest market, the adverse effect of high interest rates has been even more evident than in Great Britain. In spite of weak domestic demand, relatively high activity has been maintained in most industrial lines, with large exports. Unemployment this winter appears to be greater even than in 1928-29, when the severe winter weather was exceptionally unfavorable to employment. The easing of the international-credit situation, together with the impending adoption of the Young plan and establishment of the International Bank, should improve prospects for borrowing long-term capital and may be expected to result in an improvement in the German situation. Just how long it will take for these factors to bring about substantial

improvements is uncertain, but it seems that their influence should be felt at least by the end of 1930 and that economic conditions in Germany during most of the 1930-31 marketing season may be appreciably better than during 1929-30.

Central European countries have followed a course similar to that of Germany, and in certain instances, notably Austria, present conditions appear even more unfavorable. Significant improvement in that region seems likely to be delayed until after the German situation improves. In Poland, financial conditions continue unsatisfactory, with little prospect of improvement during the present year.

The general economic situation in France has been satisfactory for many months. Excellent harvest results in 1929 were a further favorable influence to the economic situation, but have restricted purchases of competitive agricultural products. The financial position of the country is strong. Industrial activity in France is on a high level, and the purchasing power of that market is probably better than at any time since the World War. On the other hand, it does not appear reasonable to expect significant further improvement in the near future, and certain factors point to some recession during next year. The most important is the prospect for some reduction in expenditures of tourists from both North America and South America for 1930 as compared with the preceding two or three years. Much the same general economic situation and outlook prevail in Belgium as in France. In the Netherlands, industrial activity is high and unemployment small. Purchasing power of that market for American agricultural products should be maintained.

In Italy signs of business recession have recently appeared, and the outlook for 1930 is somewhat less favorable. A great deal depends upon the ability of Italian manufacturers to maintain their position in export markets. There seems to be some question as to their ability to do so. The possible reduction in tourist expenditure is an unfavorable factor as is the prospect of some reduction in demand in certain of Italy's rather important markets in Latin America. On the other hand, the 1929 crops in Italy were exceptionally large; and although this is restricting the market in that country for such products as wheat and tobacco, it should strengthen the market for cotton by improving the domestic demand for textiles.

Economic conditions in the Scandinavian countries have been good for some time and appear likely to continue favorable in 1930-31 for the marketing of such American agricultural products as those countries take. This applies particularly to fresh and dried fruit.

The marked decline in the exchange value of Chinese currency has reduced, temporarily at least, the purchasing power of China for foreign products. The recent drastic fall in the price of silver is the outstanding feature of the Oriental economic situation. The prospect for a stabilization of the Chinese monetary situation in the near future does not appear particularly bright and this, together with the renewed uncertainty as to the political situation, makes the Chinese market outlook less favorable for the coming season. In Japan, the return to a gold currency basis seems likely to aid stability to the Japanese financial position but this is probably more than counterbalanced by the relatively low price of raw silk, Japan's principal export, and the prospect for some reduction in the outlet in China for Japanese goods. Nevertheless, it does not seem likely that these conditions will do more than check somewhat the rather pronounced upward trend in Japanese demand for our principal agricultural exports to that market, namely, cotton and wheat.

Competition of foreign agricultural products in domestic and foreign markets seems likely to be greater on the whole in 1930 than last year. Prospects vary considerably, however, for different products. The general trend of foreign wheat production is upward. Last year extremely unfavorable weather conditions in the principal foreign surplus areas both in the Northern and Southern Hemispheres reduced competition from foreign wheat. Some reduction in foreign rye production in 1930 may be anticipated in view of relatively large production and low prices of the last two years. Flaxseed production in foreign countries, particularly in Argentina which produces about three-fourths of the world's total, was materially reduced in 1929 by unfavorable weather conditions. The trend in flaxseed production in Argentina is upward and a considerably larger supply of Argentine flaxseed in 1930-31 may be expected.

American cotton appears to be meeting somewhat more competition from foreign cottons. This seems to be due in part to larger supplies of foreign

cotton and in part to improvements in the quality of some foreign growths, notably in India. The tendency to increase the proportion of very short staple cotton in some of the States of the United States tends to bring American cotton into sharper competition with the Asiatic growths. An increase in the supply from other foreign countries, particularly those in South America and Africa, must be considered a distinct probability for the future, but this is likely to be influenced to a great extent by world cotton prices, which in turn are influenced largely by production in the United States.

Production of tobacco that is competitive with our bright flue-cured in British African colonies has apparently received a severe setback as a result of overstocking and low prices in the British market. No other foreign areas promise serious competition for our flue-cured tobacco in the near future. In dark tobaccos, however, the situation from a long-time point of view seems to be less favorable in view of a tendency to increase production of competitive dark types in Europe and some other foreign areas.

Large crops of apples in Europe and eastern Canada resulted in an increase in competition met by our apples in foreign markets this season. Bumper apple crops are in prospect in Australia and New Zealand which will restrict the outlet for our cold-storage apples during the last part of the current marketing season. Some decline in foreign competition during the 1930-31 season seems reasonable. Increasing production and export of oranges in Brazil and South Africa are apparent, which means more competition for American oranges shipped to European markets during the summer.

An upward movement in the European hog-production cycle has got under way. The movement is being stimulated by the large supply of cheap feed-grains. Increased pork production will undoubtedly mean a considerable increase in competition for American pork products in European markets toward the end of the present marketing season (ended in October) and during 1930-31. Large supplies and low prices of vegetable oils in Europe seem also to be having an adverse effect on the demand for American lard. Foreign dairy production is now fairly stable with prospects of only moderate increases in supply. The gradual increase in foreign wool production in evidence during recent years was halted, temporarily at least, in 1929 and no significant trend either upward or downward is now in prospect for the next year or two.

AGRICULTURAL CREDIT

The outlook for farm-mortgage financing and for marketing credit is more favorable than a year ago. On the other hand, the outlook for production credit, especially in the early months of the year when important production requirements must be met, appears less satisfactory in most of the South. In the East, the supply of production credit will be about the same as last year; in the rest of the country the outlook varies from section to section with the supply of credit largely influenced by local factors.

The money market in the United States has eased materially since October, when the securities market entered a period of drastic liquidation. The easing of central money market conditions, bringing to a close the extraordinary rise in money rates which began early in 1928, resulted in a general downward movement in interest rates.

Extensive open-market purchases by the Federal Reserve System and two successive reductions in the discount rate of the Federal Reserve Bank of New York, lowering the rate from 6 to 4½ per cent, contributed materially to the easing of credit conditions. Other Federal reserve banks have reduced discount rates, the rate now being 4½ per cent in seven banks and 5 per cent in the other five banks. Interest rates on commercial paper have declined from a peak of 6¼ per cent to 4¼ per cent.

Further reductions in short-term open-market rates and a continuation of a more gradual decline in interest rates on long-term borrowings may be anticipated. In general, this should have a favorable effect on the available supply and cost of funds for farm-mortgage loans and for certain types of short-term credit. As in other years, however, sectional differences in farm returns will have an important bearing on local supply of funds, liquidation of old loans, need for new advances, and credit standing of borrowers.

The unfavorable bond market during 1929 made it difficult for the Federal and joint-stock land banks to sell bonds on a satisfactory basis, resulting in a material curtailment of funds available for loans. Some betterment is

anticipated as the result of easier conditions in the central money markets, although improvements are not likely to be reflected in lower rates to farmer-borrowers during the early months of the year. Rates on mortgage loans from insurance companies may be expected to decline.

Credit to finance the marketing of farm crops already has reflected the change in the money situation. Rates on bankers' acceptances have declined from the peak of $5\frac{1}{2}$ per cent of last June to $3\frac{3}{8}$ per cent at present (February 1). Rates on direct loans by the intermediate-credit banks and on other loans based on warehouse receipts also have decreased from the high levels of last fall, and further reductions are in prospect. To these changes, affecting favorably the outlook for marketing credit, should be added the effect of commodity loans by the Federal Farm Board to cooperative marketing associations at favorable rates of interest. Unless some unforeseen development should occur before the next harvest period, ample credit for the marketing of farm products should be available at lower rates than in 1929.

The cost of credit for production in farming has shown little correlation with year-to-year changes in central money market rates; therefore, no appreciable change in the rate for production loans is anticipated. Interest rates on production loans from the intermediate-credit banks respond more readily to changes in central money market quotations as evidenced by the fact that since the middle of November seven banks have made reductions, ranging from one-fourth to 1 per cent. Loans from this source, however, provide only a small fraction of total requirements for production credit.

The supply of credit for production purposes will be less adequate in some sections of the country than in others. The extraordinary developments in the security markets during the last year have contributed to some shifting of funds away from agricultural areas. Partly in consequence of this, country banks in many sections entered the new year with a relatively large volume of borrowing, although not materially different from the high level of a year earlier. But the situation this year is characterized by a somewhat lower level of demand deposits. Time deposits, which usually show a more or less steadily upward growth in agricultural sections, declined slowly during most of 1929.

These factors and others, including bank failures in some areas, indicate a decline in the ability of country banks in some sections to provide funds for production purposes, especially during the early months of 1930. In the industrial States of the East, it is anticipated that loanable funds will be available, in about the usual supply, to farmers who have reasonably satisfactory credit standing. Some reduction of the credit supply, however, is indicated in the Southeastern States, and in the southwestern part of the Cotton Belt, where returns from last year's cotton crop were low and where a short feed crop probably will necessitate some increase in short-term borrowing. In other regions of the country conditions vary from section to section and the prospective supply of production credit necessarily will be governed by the local situation. In any section, the liquidation of crops now held in storage will be a factor in determining the local demand for and supply of credit.

As in other years, cost of merchant credit, especially in the South, continues to be much higher than the cost of other principal forms of credit. For this reason, farmers should, whenever possible, use credit from banks or other specialized credit agencies, and obtain the advantage of a cash price, rather than buy supplies and equipment on time from merchants and dealers.

FARM LABOR, EQUIPMENT, AND FERTILIZER

With industrial activity expected to continue at lower levels than a year ago, a somewhat larger supply of labor for farm work will be available, and probably at slightly lower wages, during the first half of 1930 than during the first half of 1929. Should the expected increase in industrial activity occur during the second half of 1930, there will be a tendency for the supply of farm labor to decrease with the probability of higher wages during the last quarter of 1930 than prevailed during the last quarter of 1929.

The high level of business activity during the spring and summer of 1929 was responsible for a decrease in the supply of farm labor and slightly higher wages. During the third quarter industrial activity slackened, and by the fourth quarter farm labor was more plentiful and wages were slightly lower than for the same periods in 1928.

Any changes in the supply of farm labor will be more pronounced in sections adjacent to industrial centers, and, perhaps in some sections where the mechanization of agriculture is taking place rapidly. Any material expansion in the acreages, or increase in the yields of crops, will tend to increase the demand for labor and to strengthen wages.

The general price level for farm machinery is expected to remain about the same for the current year as during the last four years. Indications point to an increased demand for tractor-drawn equipment, especially in the Great Plains wheat region, in the western cotton region, and in the central Corn Belt, with consequent reduction in the demand for horse and mule drawn machinery.

Decreased building activity during 1929 was reflected in declining prices for building materials, especially lumber. Unless residential building activity in 1930 should increase materially over 1929 it is likely that the prices to farmers for most building materials will average less in 1930 than in 1929, but may strengthen somewhat during the year.

According to fertilizer tag sales, purchases of fertilizer in the Southern States in 1929 were slightly below those of 1928, as was forecast in the outlook report of 1929. This decrease occurred in the group of Southern States east of the Mississippi River and was sufficient to more than offset increased purchases by the group of cotton States west of the Mississippi. For the United States as a whole, there was a slight increase in the total sales, caused by an increase in takings by the Northern States.

Sales of fertilizer are closely related to the gross income per acre for important fertilizer-consuming crops in the preceding year. The gross income from these crops in some sections was somewhat greater in 1929 than in 1928. Some increase in the use of fertilizer in 1930 is to be expected in those sections in which gross incomes were more favorable in 1929 than in 1928.

Both wholesale and retail fertilizer prices are lower than a year ago and no immediate increase in price is in evidence. In November, 1929, the wholesale price of fertilizer materials was 4.5 per cent below November, 1928. Prices of potash materials were about 1 per cent above a year ago; superphosphate was 5.3 per cent lower, sulphate of ammonia about 10 per cent lower, and nitrate of soda 3 per cent lower, than last year. Retail prices of fertilizer and fertilizer materials are about 3 per cent below those of last year.

COTTON

The following statement presents a brief review of certain phases of the cotton situation during recent years, up to the early part of January, 1930. In conformity with existing legislation limiting the scope of reports on cotton, no attempt has been made to project the trends of these data or to make any forecast or prediction with respect to future prices of cotton or the trend of these prices.

Acreage and production of cotton during the last five years, with the exception of 1927, have been held at comparatively high levels. It seems certain that any increase at present would be unwise. In view of all the conditions surrounding the cotton industry, it seems highly desirable that cotton growers this year should give especial attention to economical production. More, perhaps, is to be gained this year than in most years, from holding the expense of production in relation to output to the minimum. This may be accomplished by good farm management and cultural practices, such as careful selection of land, including the elimination of those parts of individual farms not profitable for cotton at present prices, timely planting and cultivation, judicious use of fertilizers (taking into account the price of fertilizer and the price of cotton), careful selection of seed varieties for the particular location, and production of farm and family supplies. Other enterprises that offer equal promise of income or that make for reduced farm and family expenses should be substituted for cotton wherever possible.

In the year 1926, acreage and production in the United States were the largest in history. The acreage harvested was 47,100,000; the average yield per acre was 182.6 pounds; and final ginnings were 17,800,000 running bales. This crop, added to a world carry-over of 5,400,000 bales on August 1, 1926, gave a total world supply for the 1926-27 cotton season of 23,200,000 American bales. The supply of all growths was 36,300,000, calculating foreign growths to equivalent 500-pound bales. Under the weight of supply, prices broke precipitately

and on December 3, 1926, reached the low point of 11.4 cents per pound for middling $\frac{7}{8}$ -inch in the 10 designated markets. Prices to growers generally were less than in these central markets and in some parts of the Cotton Belt considerable quantities of lower-grade cotton were marketed at 8 cents a pound and less. Low prices, however, had the effect of stimulating consumption and exports. World consumption gained rapidly during the latter half of the 1926-27 season, and for the season as a whole reached the high total of 15,800,000 American bales (Federation of Master Cotton Spinners). American exports also gained and reached 11,000,000 bales for the season. The trend of prices during the latter half of the season was upward and the 10-market average for the year was 14.4 cents a pound. The season of 1926-27, it may be noted, was one in which production materially exceeded consumption and on July 31, 1927, there were left 7,800,000 American bales and 10,600,000 bales of all growths of cotton in the world to be carried over.

In response to the low prices received for the 1926 crop, cotton acreage was substantially reduced in 1927 and in the United States 40,100,000 acres were harvested. On this acreage an average yield of 154.5 pounds resulted in a total crop of 12,800,000 bales; and this, with the carry-over of 7,800,000 American bales, gave a total world supply for the season 1927-28 of 20,600,000 American and 34,000,000 bales of all growths. The season started off with consumption at high levels, the rate during the first six months being favorably influenced by the supply of cheap cotton still available from the season of 1926-27. As this influence waned, however, the rate of consumption declined and world consumption of American cotton for the season dropped to 15,400,000 bales (Federation of Master Cotton Spinners). Exports for the season fell also to 7,500,000 bales. The average for the season 1927-28 of prices quoted in the 10 markets was 19.7 cents a pound. World consumption of American cotton in the 1927-28 season exceeded the crop of 1927, and the world carry-over of American into the season 1928-29 was 5,100,000 bales. The carry-over of all growths was 9,400,000 bales.

As a result of better prices for the crop of 1927 the acreage in the United States in 1928 was increased to 45,300,000; the average yield in that year was 152.9 pounds per acre; and the crop amounted to 14,300,000 bales. This crop, with the carry-over, gave a total world supply for the 1928-29 season of 19,400,000 American bales and 35,000,000 bales of all growths. World consumption, however, in the 1928-29 season was again slightly retarded, the total for the year being 15,100,000 American bales (Federation of Master Cotton Spinners). Exports in that year were 8,000,000 bales. Prices for the 1928-29 season were rather steady, tending to strengthen gradually until early March, and then to decline slowly, the average for the season being 18.7 cents a pound. On July 31, 1929, there were approximately 4,500,000 bales of American and 9,300,000 bales of all growths left in the world to be carried over into the 1929-30 season.

In 1929 the acreage was again increased, bringing the total harvested in the United States to 46,000,000 acres. With an indicated yield of 155.3 pounds lint per acre, production in the United States has been estimated to be 14,900,000 bales of 500 pounds. In recent years total United States cotton production in terms of running bales has been about 200,000 less than of equivalent 500-pound bales. This crop, with the carry-over of 4,500,000 bales, gives the total world supply of American cotton for the season now estimated at about 19,400,000 bales.

World consumption of American cotton for the four months ended November 30, 1929, according to the New York Cotton Exchange Service, amounted to 4,900,000 bales, as compared with 5,100,000 bales in the corresponding period of the previous season. Domestic consumption of American cotton from August 1 to December 31, 1929, amounted to 2,600,000 bales, which was slightly less than that for the corresponding period in 1928.

WHEAT AND RYE

There is little in the wheat situation in the United States and other countries at present to indicate that prices for the 1930 crop of the United States will be much different from those prevailing for the 1929 crop, unless fall-sown wheat suffers severe winter damage or the spring-wheat acreage is reduced. World stocks will be somewhat reduced on July 1, 1930, from those on hand July 1, 1929, but the world acreage will probably not be materially changed and yields per acre are not likely to be so low

as in 1929, when they were below average. World demand for wheat appears to be increasing although the annual increase may be checked occasionally by unfavorable financial or international-trade conditions. This increased demand is due to growth of population and to the tendency to shift, in consumption, from other breadstuffs to wheat. World production of wheat, however, is keeping pace with the increasing demand, so that there is little prospect for a general upward trend in prices for some years to come. Farmers of the United States, therefore, must expect to meet continued keen competition in export markets from Canada, Australia, and Argentina, and later possibly from Russia.

The estimated world total acreage, exclusive of Russia and China, for harvest in 1929, was 245,000,000 acres, as compared with 244,700,000 acres in 1928, and a 5-year average of 234,000,000. There has been a tendency to increase acreage in all important exporting countries during the last five years. It is possible that acreage expansion may be checked temporarily by the experience of the last two seasons. Preliminary estimates indicate that the acreage harvested last season in European countries (outside of Russia) was somewhat less than the high figure of 1928. In some of the important European countries prices have been relatively low for the second successive year, which may tend to discourage planting. Rumania has reduced its fall-sown wheat acreage, but reports from northern Europe seem to indicate that the acreage will be maintained in most countries. Conditions are not very favorable for expanding the wheat area during the coming year in surplus-producing countries competing with the United States. It is possible that Canada will maintain its present acreage, but a low price in 1928-29 season, followed by a season of low yields in 1929-30 and only moderate prices, may discourage expansion for a short time. Furthermore, the Prairie Provinces went into the winter with a deficiency of moisture, which may tend to reduce yields below average in 1930 unless the spring season is very favorable. Not much, if any, expansion is to be expected in Australia, where some areas have had a short crop in the season just closing. In Argentina, low wheat prices and low yields may tend to encourage shifting from wheat to corn (for corn prices have been good and there is prospect of a good crop) and to flax, for flax prices are unusually high.

Fall seedings in Russia have been about the same as last year, notwithstanding efforts to increase the acreage. The Government hopes to increase spring-wheat area, but the actual increase to be expected is uncertain. It does not, therefore, appear that there is much, if any, likelihood that Russia will be in position to export appreciable quantities next year, unless the yield is high. In the course of a few years Russia may again become an important factor in the world markets.

The production of 41 countries in 1929 (which in 1928 harvested 96 per cent of the world's crop, outside of Russia and China) is now estimated to be 3,273,000,000 bushels, as compared with 3,803,000,000 last year, and the 5-year average (1924-1928) of 3,384,000,000. However, the reduced production in 1929 was brought about by reduction in yield and not by reduction in acreage. The average yield per acre for all countries reporting acreages and yields in 1929 was 14 bushels, as compared with 16 bushels in 1928, and the 5-year average of 15 bushels per acre. There are some indications, however, that yields per acre have a slightly upward tendency. It appears certain that the yields in 1928 were abnormally high, whereas the yields of last season were about as much below average as those of the previous season had been above.

The rye crop in Europe, where most of it is grown, has been large for the last two years and prices have been low; this may tend to cause some shifting to wheat. The rye crop in the United States has been declining rapidly during recent years.

It is probable that world consumption of wheat this season will exceed production and that stocks will be somewhat reduced by the beginning of the next crop year, July 1. Stocks on farms in the United States on January 1, 1930, were about 50,000,000 bushels below stocks a year ago, but this is largely offset by an increase in the visible supply and in mill stocks compared with a year ago. The carry-over of old wheat for North America at the close of the marketing year July 1 will probably be large, but if the expected increase in exports over those of this season to date materializes during the next few months stocks will be less than on July 1, 1929. Stocks of wheat in Argentina and Australia

will probably be smaller on account of the very short crops, so that export demand for United States wheat should be better in June, July, and August than in the corresponding months last year. Present prospects as to acreage indicate that with average yields the world supply of wheat for the 1930-31 season may be about equal to the supply available for this season. With a smaller carry-over, world prices might average slightly higher, but any great improvement in prices could result only from yields below average. Similarly a season of yields higher than average would result in lower prices.

WINTER WHEAT

The area seeded to winter wheat in the United States in the fall of 1929 is estimated to be 43,690,000 acres. This represents a decrease of 8 per cent from the large seeding in the fall of 1927, but is 2 per cent larger than the area seeded in 1928 and is greater than for any other year since 1922, when 46,091,000 acres were sown. The most important increases occurred in the hard winter wheat States of Kansas, Colorado, and Texas, and in the northern Great Plains States. There was but little net change from last year in the soft winter area of the Corn Belt and Appalachian States. Seedings in the northwestern white wheat States were about 5 per cent less than last year, probably because of the severe drought, but this decrease may be of little significance, since in former years low seedings in the fall have been followed by higher seedings the next spring.

Unless adverse conditions develop between now and harvest time, another large crop of winter wheat will be produced in 1930. If yields and abandonment are equal to the average of the last 10 years, the acreage seeded would result in a production of approximately 570,000,000 bushels, which would be only slightly less than the large production of 578,000,000 bushels in each of the last two years. Of this total, hard winter wheat would comprise about 345,000,000 bushels, soft-winter wheat 180,000,000 bushels, and white wheat 45,000,000 bushels. This production would keep us on a level far above domestic requirements for hard-winter wheat and slightly above our domestic consumption of soft-winter wheat, which in recent years has been approximately 200,000,000 bushels for hard winter and 160,000,000 bushels for soft winter wheat.

HARD SPRING WHEAT

Despite a slightly larger acreage seeded in 1929, production of hard spring wheat in the United States was considerably less than in 1928. The severe drought which prevailed over most of the region resulted in yields materially lower than are normally obtained. With 10-year average yields, the same acreage would have resulted in a production of hard spring wheat of about 160,000,000 or slightly above our normal domestic requirements, which are in the neighborhood of 150,000,000 bushels. With another large crop of hard red winter wheat in prospect, hard spring wheat growers are likely to find that an expansion in the present acreage of this class of wheat is undesirable. Any expansion would probably result in lower prices, if average or better than average yields are obtained, unless the protein content of hard winter wheat is lower than in 1929. In fact, growers may find it profitable to reduce their present acreage somewhat and turn to flax, particularly if the growing conditions of the hard winter crop continue favorable. (See flax report for a comparison of the average returns from the two crops.)

DURUM WHEAT

Prices of durum wheat will probably continue relatively low for another season unless acreage in the United States is further curtailed or production in other competing countries is reduced. There are, however, some indications of reduced acreage in the United States and smaller crops in other countries. Developments in north Africa and southern Italy should be watched carefully during the next few months in order to judge how large an acreage may best be planted in the United States.

The durum wheat crop of 1929 for the United States, which amounted to about 57,000,000 bushels, was the smallest since 1926. Thus far this season, however, durum wheats have sold at prices considerably below other spring wheats. A large carry-over in the United States and a large crop in southern Italy have greatly weakened demand. Exports have been small, so that stocks of durum wheat at Duluth and Minneapolis, as of January 4, were only slightly

smaller than a year before. It seems likely that exports will be somewhat larger toward the end of the season.

Domestic requirements, including seed, mill grindings, feed, and mixing with other wheats, probably amount to about 40,000,000 to 45,000,000 bushels, and when prices are low the disappearance within the country may exceed these figures.

It seems unlikely that as large a crop as that of 1929 will be repeated. Conditions in north Africa to date appear to be somewhat unfavorable for the 1930 crop. Tunis reports the same acreage as last year. Scarcity of rainfall has been unfavorable to germination and growth of the crop in Morocco. Droughty conditions have prevailed in Algeria until recently. Canadian acreage is not likely to be expanded much, if any, because of the low prices of the last two seasons. Foreign competition of durum in the coming year, therefore, is not likely to be greater, if as great, as during 1929-30.

In 1929 the acreage of durum harvested was reduced about 22 per cent from the previous year's level. A further reduction of 19 per cent for 1930, if accompanied with average yields, would result in a crop as large as 1929. Whether such a reduction will be advisable will depend largely upon the outturn of the 1930 durum production of foreign countries. Further information concerning the outlook for the crop in northern Africa and southern Italy will be available before planting time, and spring-wheat growers should take this into account in planting their acreage of durum wheat.

FLAX

Present prospects indicate that higher returns are to be expected from flax in 1930 than from wheat and other small grains grown in the same area and under the same conditions. Some further expansion in flax acreage is therefore warranted on land that is free from weeds or otherwise suitable for flax or on which yields greater than the average of the area may be expected. An increase in acreage of one-third could be made without fear of reducing domestic prices to the world level. Such an increase in acreage with average yields would produce a flax crop of approximately 32,000,000 bushels, or about 11,500,000 bushels below domestic consumption of the last two years.

The prevailing high prices for flaxseed in the United States are due largely to a decreased world production, to low stocks of both seed and oil, and to the differential advantage afforded by the tariff. The 1929 flax crop in the United States totaled only 16,838,000 bushels, the smallest production since 1922. Although the acreage seeded was larger than that of any year since the record crop of 1924, the yield was sharply reduced by the severe drought during the summer. If last season's carry-over is added to the current production and probable seed requirements for 1930 are subtracted, a supply of approximately 19,000,000 bushels remains for commercial purposes. This represents a reduction of about 2,600,000 bushels from the short 1928-29 domestic supply and 11,000,000 bushels from the 1927-28 supply.

Supplies of flaxseed in Canada and Argentina, whence come practically all of our imports, are also shorter by about 29,000,000 bushels than last year. The 1929 Canadian crop is estimated to be 2,007,000 bushels and the Argentine crop 55,627,000 bushels. The production in these countries the preceding year was 3,614,000 bushels and 82,791,000 bushels, respectively. No estimate is yet available for the 1930 Indian crop but the acreage is placed at 2,258,000 acres which compares with a harvested acreage of 2,568,000 in 1929. The carry-over of old-crop seed in Argentina and India was small, and less seed will be available for shipment from Argentina during the remainder of the season than during recent years.

Domestic disappearance of flaxseed during the last two years has averaged around 43,500,000 bushels. Our domestic supply of 19,000,000 bushels thus could supply less than half our current consumption. Starting with very heavy stocks at the beginning of the 1928-29 season, linseed oil passed rapidly into consuming channels and the disappearance of 804,000,000 pounds for the year ended September 30 was the largest on record. This heavy consumption has reduced stocks to the lowest figure since 1925. In view of the relatively high prices of linseed oil which are likely to prevail during the remainder of the crop season and considering the prospective lower levels of building and business activity, consumption of oil may be curtailed somewhat below the

high levels of the last two years. Some substitution of soybean and other drying oils may be encouraged by higher linseed-oil prices, but this is not likely to be an important factor in the linseed-oil market.

European imports of Argentine and Indian seed during the last season were of good volume until about the middle of August, when they declined sharply to an unusually low level and have continued low since that time. In view of the short crop in Argentina and the resulting higher prices for seed, it is probable that European imports will not be as large as for the last season. This will leave relatively larger quantities available for export to the United States. Feed supplies in Europe are considerably larger than last year, because of unusually favorable feed-grain crops, so the foreign demand for linseed meal is likely to be lower than last year.

The relatively high prices prevailing for flaxseed in the United States is likely to encourage some further expansion in flax acreage. If farmers respond to these relative prices in 1930 as they have in the past they will increase their flax acreage between 40 and 50 per cent over the acreage in 1929. Farmers should hesitate to make such a marked increase as this, for it unquestionably would result in prices much lower than those received for the 1929 crop. If acreage is not increased more than one-third, flax promises to be a more profitable crop than wheat and other small grains grown in competition with it. At average yields, the net returns per acre from flax selling at \$2 per bushel would be equivalent to those from wheat selling at \$1.40 per bushel. With the same average yields, flax at \$1.90 per bushel would be as profitable as wheat at \$1.30, and at \$1.60 per bushel as profitable as wheat at \$1.10. On the other hand, if flax sold at \$2.20 per bushel, wheat would have to sell for slightly over \$1.50 to be as profitable. The relation between acre returns from flax, oats, and barley is even more favorable to flax. In the four spring-wheat States flax has averaged 7.9 bushels and wheat 12.2 bushels per acre during the last 10 years.

RICE

The outlook is for a continued improvement in rice prices in the southern belt for the remainder of this season and through the 1930-31 season. California prices are expected to show some further advance this year, but prices of California rice during the 1930-31 season will be influenced to a considerable extent by developments in the crop and market situation in Japan. Demand for American rice is increasing slowly in the United States, insular Territories, and foreign countries, but competition of foreign-grown rice is likely to prevent much further increase in foreign demand.

Prospects are that, with about the same acreage, rice production in the southern States will be smaller in 1930 than in 1929, when yields and quality were much above average, and that prices for southern rice will be higher. It usually requires two or three years for rice acreage to change materially because of production practices peculiar to rice growing and because of the relatively large capital requirements. Rice production in the United States for the three years 1923-1925, inclusive, was relatively low and during the three years 1926-1928, inclusive, production was relatively high. In 1929, production was well under the level of the previous three years; 1929 appears to be the first year of another period of relatively low production.

Rice acreage in the southern belt for 1930 probably could be increased as much as 4 per cent, or about 25,000 acres, without depressing prices below the 1929 levels. The production of rice in the southern belt for 1929 was 34,000,000 bushels as compared with 35,000,000 for 1928 and 36,000,000 for 1927. The 1929 yield of 45 bushels per acre was well above the 10-year average of 40 bushels, and largely for that reason the total production in 1929 was only 1,000,000 bushels short of the 1928-29 crop. The season's supply of southern rice, however, was 1,300,000 bushels short of last year's because of a smaller carry-over into 1929-30. The good quality of this year's crop has materially increased the mill turnout, thus making the year's supply of milled rice proportionately greater than the estimate of rough rice. Exports of southern rice for the first five months of the current season were less than in the corresponding period of 1928-29. It seems probable that exports will continue to run behind last year's in view of the low prices of Asiatic rices in competitive markets and the tendency for prices of United States rice to rise. This reduction in exports may result in a slightly larger carry-over of southern rice

at the beginning of the 1930-31 season, but this is likely to be offset by the prospect of a small production of southern rice in 1930.

The 1929 crop estimate for California was 6,000,000 bushels as compared with 8,000,000 bushels harvested in 1928. Stocks of California rice on August 1, 1929, were less than on the same date in 1928. California rice is, therefore, in considerably smaller supply than last year, but is still definitely on an export basis. The low prices prevailing in Asiatic rice-exporting countries may restrict purchases of California rice by Japan, while the large rice crops of Italy and Spain will tend to reduce California exports to Europe and South America. On the other hand, there is some prospect of larger rice exports to Japan this season than in 1928-29 in view of the reduction in Japanese production in 1929 and the recent stabilization of Japanese currency. In view of the smaller supply of California rice, however, it seems probable that exports will be sufficiently large in 1929-30 to result in some further reduction in the stocks on August 1, 1930, as compared with August 1, 1929. If rice acreage in California in 1930 is maintained or slightly increased over last year's figure, and an average yield obtained, the production will be about equal to requirements of the domestic market and Hawaii. Production in excess of this quantity must be sold in foreign markets, particularly Japan, about which no prediction can now be made.

OATS

Oat production for market during the 1930 crop year is not likely to bring better returns to producers than during the past crop year. No material improvement in either domestic or export demand is in prospect, whereas more active competition from larger supplies of other feed grains appears probable.

Supplies for the current year are below those of last year by around 150,000,000 bushels or 10 per cent. A decrease of 200,000,000 bushels in crop outturn was partially offset by an increase of 50,000,000 bushels in carry-over at the beginning of the season, August 1, 1929. This decrease in production was due to a decrease of around 1,500,000 acres in the area harvested in 1929 and a yield 3.7 bushels below the high yield of 1928. Production of oats in 1929 was below 1928 and below average in each grand division except in the South Atlantic States, where production was fully 10 per cent above the 10-year average (1918-27). In the North Atlantic States production of oats was 25 per cent below average. In the North Central States west of the Mississippi River, where nearly half the entire crop and over half of the market oats are produced, the 1929 crop was only 2 per cent below average. There has been a downward trend in the proportion of the oat crop of this area shipped to market which reflects the increasing importance of livestock feeding in this area. This trend will probably continue since livestock numbers have shown some further expansion in this area.

Demand for oats during the next crop season is not likely to be stronger than during the current year, beginning August 1, 1929. The continued decline in the number of horses and mules during coming years may be offset to some extent by increased numbers of cattle. Increased quantities of oats have been used in mixed feeds for dairies and poultry and this may broaden further the outlet for market oats during this year. On the other hand, should supplies of other feed grains be equal to the average, the market demand for oats may be reduced. Export trade in oats is of little significance since less than 3 per cent of the crop is usually exported. Canada is the principal destination of oat exports; smaller quantities go to Mexico and Central American countries. The steadily expanding acreage of feed grains in Canada during recent years appears unfavorable to increase import takings of United States oats in the future. Even with such a drastic reduction in the Canadian oat crop as has occurred during 1929, when only 280,000,000 bushels were produced as against 452,000,000 bushels in 1928, United States exports to Canada have been smaller than during the preceding year. Canada still has on hand relatively large supplies of other feedstuffs, particularly barley, as a result of smaller exports for the season to date, which may restrict import inquiry for the United States oats during the remainder of the season.

Acreage of oats in the United States has had a rather definite downward trend since 1921. The increase in the seeded area in 1925, due to a large abandonment of winter wheat, was again followed by a rather marked decrease

in acreage for every following year. In view of the prospects for further declines in the horse population of the United States, both in cities and on farms, and the apparently lower gross and net returns from market oats when compared with competing crops, a further decline in oats acreage is probable. Yields for the United States as a whole have tended slightly upward since 1921 and this if continued, may tend to offset the decrease in acreage.

BARLEY

No material improvement in demand for United States barley is in prospect for the crop year beginning August 1, 1930. Prospective numbers of livestock indicate no expansion in domestic requirements and European prospects suggest only a slight increase in foreign demand. While an increase in European demand for feed grains may be reflected in greater takings of United States barley, increased competition may be expected from Canada and Argentina where acreage is expanding. Barley is being substituted in increasing quantities for oats and corn in hog and cattle rations and giving larger per-acre returns than oats. In many districts barley produces more pounds of feed per acre than oats; in such districts barley will probably continue to be worth more per acre than oats in years of average yields even should barley production continue to increase.

A record acreage of barley totaling 13,212,000 acres was harvested in 1929. Yields were about 5 bushels per acre less than in 1928 but only slightly below average, and a total crop of 307,105,000 bushels was produced compared with 357,487,000 in 1928. Farm and market stocks on August 1 totaled 24,880,000 bushels compared with 11,147,000 the previous year, so that total supplies of barley were only about 10 per cent below the record quantity of last season.

Barley production in Europe in 1929 was about 9 per cent above the 1928 crop and, in addition, Europe had large oat and potato crops and an exceptionally large corn crop. There was also increased competition from Danubian and Russian barley in European markets during last season so that imports of American barley were greatly reduced and there are no prospects of material improvement in export demand during the remainder of this crop year. United States barley exports from August 1 through December totaled only about 14,500,000 bushels compared with 41,000,000 bushels for the corresponding period last year. Although the 1929 United States crop was around 50,000,000 bushels below the record outturn of 1928, most of this decrease has been offset by the increased stocks at the beginning of the season and by the reduced exports, so the carry-over next August now promises to equal the large supplies in store at the beginning of the current season unless there is an unexpected increase in domestic consumption or in exports.

Barley has been a more profitable crop than oats in the North Central States during the last few years. These States produce approximately 80 per cent of the total domestic crop. Based upon the 5-year average yields of 27 and 32 bushels per acre of barley and oats or 1,296 and 1,024 pounds, respectively, in these States, oats would have to sell at 46 cents a bushel at the farm to yield the same returns as barley at 55 cents, the average farm price December 1. Barley at 50 cents would be equivalent to oats at 42 cents per bushel and barley at 60 cents would equal oats at 51 cents per bushel. With per-acre yields equal to the average of the five years 1924-1928, gross per-acre returns on barley were \$17.75 compared with \$13.13 for oats on the basis of the average farm price of those years. For the four spring-wheat States the gross per-acre returns for barley were \$14.50 compared with \$12.10 for oats, \$15.70 for wheat, and \$16.20 for flax. In view of the probable continued decrease in horse numbers and with numbers of feed animals likely to increase, a continuation of the favorable margin of barley over oats seems likely.

CORN

With normal planting conditions, an increase in corn acreage in 1930 of nearly 2 per cent might be expected. Should an average yield per acre be obtained corn production would be about 5 per cent larger than in 1929. With the possibility of lower feeding requirements and no material improvement in commercial or European demand for American corn, prices for the 1930 corn crop are likely to be lower than for either the 1928 or 1929 crops. Some improvement in cash corn prices is possible between January, 1930, and the period

when new-crop prospects begin to affect the market. With an increase in cattle numbers definitely underway, the long-time outlook is for corn prices to be somewhat more favorable relative to livestock prices than during recent years.

The total supply of corn on November 1, 1929, was about 6 per cent, or 175,000,000 bushels, less than the supply of each of the last three years and was the smallest since 1924. About 10 per cent less oats and barley was available at the beginning of this season than last, and the grain-sorghum crop in 1929 was nearly 30 per cent smaller than in 1928. Supplies of hay are slightly larger than last year.

Distribution of the 1929 crop differed materially from that of 1928. About 71 per cent of the 1929 corn crop was produced in the North Central States as compared with 75 per cent of the 1928 crop and 69 per cent of the 1927 crop. A year ago supplies of corn were large in the Corn Belt, especially in the eastern half and smaller than average in the Southeastern and far Western States. This season the supply of corn in the eastern half of the Corn Belt was about 12.3 per cent below a year ago and in the western half 7.4 per cent below. In Nebraska and South Dakota, however, the 1929 production of corn exceeded that of 1928 by about 14 per cent. Production of corn in Southern States east of the Mississippi River and in the far Western States was considerably larger than in 1928 and slightly larger than average, whereas production in Missouri, Kansas, Arkansas, Oklahoma, and Texas was only 70 per cent of the 1928 production.

Farm stocks of corn on January 1, 1930, were estimated to be about 3.6 per cent less than the year previous; in the eastern Corn Belt States the decline was about 9 per cent; in the western Corn Belt about 7.4 per cent.

Demand for feeding during the remainder of this season will be less than a year ago, as there are substantially fewer hogs on farms, especially in those States in which corn production was materially less than in 1928. Declines in numbers of hogs on farms January 1 ranged from little to no decrease in Iowa, Minnesota, and Nebraska to about 5 per cent less in Illinois, 10 to 12 per cent less in Indiana, Kansas, and Missouri, and possibly 20 per cent less in Michigan and Oklahoma. The downward trend in horses and mules continues at the rate of 3 to 4 per cent a year. The lower prices of dairy products will discourage heavy feeding of corn to milk cows. On the other hand, the numbers of milk cows and of beef cattle on farms are several per cent greater than a year ago, although the number of cattle on feed is about the same. Some increase in the demand for corn in western Iowa and in Nebraska may be expected to develop because of the pronounced shortage of feed grains in Oklahoma and Texas.

European demand for American corn, which was such an important factor a year ago at this time will not tend to strengthen prices during the 1929-30 season. The 1929 European corn crop was about 676,000,000 bushels, or about 87 per cent greater than in 1928, and prospects in Argentina are for a crop larger than a year ago. The supply of other feed crops in Europe this season is also larger than last year.

Last winter market prices of corn made a sharp advance during January, largely as a result of the short crop prospects in Argentina and strong European demand, and then declined until the end of May. Influenced by unfavorable growing conditions during the summer months, and small supplies, prices advanced materially during the summer until September. They then declined until the first part of January, 1930, when No. 3 yellow corn at Chicago sold for 85 cents a bushel. During November and December, prices at Chicago averaged about 4 cents above prices the same time last year. During the last part of January, 1930, prices have been substantially lower than at this time last year. The margin between the lower and better grades of corn has been greater than usual, because of the low quality of receipts.

It is difficult to say whether the decline in the demand for corn, both domestic and foreign, is fully sufficient to offset the decrease of about 6 per cent in supply at the beginning of the season. The usual seasonal trend of corn prices is generally upward during the next few months until new-crop prospects become a dominant price-determining factor. A year ago the seasonal trend was downward during these months following the sharp rise in prices during January. Prices of corn are much more likely to follow their usual upward trend this season than a year ago and it is not unreasonable to expect some improvement in cash corn prices before June.

Unless weather conditions are particularly adverse this spring the acreage of corn planted will probably be larger than in 1929 when it was the lowest in 10

years. Acreage of corn in 1929 was unusually low in Missouri and in the eastern Corn Belt States, because of unfavorable conditions at planting time. It is doubtful if it will exceed 100,000,000 acres in 1930, as the general trend of corn acreage during the last few years has been downward in all sections except in the West South Central States. If the abandonment of winter wheat or legume-hay crops should be unusually high this winter, some additional increase in corn acreage may be expected. Yields per acre of corn in 1929 were 5.2 per cent less than in 1928 and 3.8 per cent below the 10-year average. With some increase in acreage and with average yields, a crop somewhat larger than that of 1929 would be produced. The general trend of corn yields per acre have been upward in most of the Northern States east of the Missouri River and upward rather than downward for the whole country.

The numbers of hogs to be fed from the 1930 corn crop will probably be less than from the 1929 crop, for farmers are already reducing hog numbers as a result of smaller production of the 1929 corn crop. The numbers of horses and mules will continue to decline; cattle numbers will continue to increase and conditions for dairy feeding in 1930-31 are expected to be more favorable than during the present season. Some improvement in foreign demand may be expected should the crop of feed grains harvested in Europe in 1930, and the 1931 corn crop in Argentina be average or below. If the 1930 corn crop is somewhat larger than the 1929 crop it is not likely that prices will equal those of the present season or a year ago.

There has been a downward trend in corn acreage in the States east of the Mississippi River since 1921. In 1921, the total area harvested in these States was 51,500,000 acres, but by 1928 the acreage had declined to 44,700,000, and in 1929 to 43,200,000 acres. The downward trend has been fairly general in all sections of the Eastern States and may be expected to continue for some time, but is likely to be less marked than during the last nine years. Increases in States west of the Mississippi River have partially offset the downward trend in the Eastern States so that the total corn acreage in the United States has declined only from 103,700,000 in 1921, to 100,700,000 in 1928, and 98,000,000 in 1929, which was the smallest acreage in 10 years. The upward trend in acreage west of the Mississippi River reached 55,400,000 in 1924 and since then acreage has held fairly constant. These trends of acreage indicate that during the next few years the corn acreage in the United States is not likely to exceed 100,000,000 acres, except in years of heavy wheat abandonment or in years following very unfavorable prices for cotton. The downward trend in acreage in the States east of the Mississippi River has been largely due to the downward trend in the acreage devoted to all crops in this area, the effect of the corn borer, and the unfavorable prices for corn compared with prices for other crops, notably cotton and truck crops.

Looking beyond the next year or two it appears that with increasing numbers of cattle, the price for corn will become higher, relative to prices for livestock, than has been the case during recent years. This is more likely to result from lower prices for livestock, rather than from corn prices actually above the levels for the crops of 1927, 1928, or 1929.

BEEF CATTLE

The outlook for beef cattle in 1930 is for conditions less favorable than those which characterized the industry in 1929. Slaughter probably will be about the same as in 1929 but demand is expected to be slightly less. The high phase of the beef-cattle price cycle, which has prevailed since the latter part of 1927, is expected to continue during 1930. However, average prices for all grades for the entire year may be somewhat lower than those of 1929. Beef-cattle raisers who contemplate expanding production are faced with a general tendency to increase cattle numbers and with a downward trend in prices over the next decade. Cattle feeders, also, will need to exercise great caution during the period of a declining price level.

The number of all cattle on farms apparently reached the low point of the production cycle in 1928 and since then the tendency of cattle numbers has been slightly upward. The estimated number of cattle on farms January 1, 1930, was 57,967,000. This was 1,500,000 head or 2.7 per cent more than on January 1, 1929, and 2,291,000 more than in 1928. Increases were general in all States except the far West, where a decrease of 1 per cent in the total number was shown. Most of the increase was in cattle kept for milk, including cows, heifers, and calves.

Total inspected slaughter of cattle during 1929 was 8,324,000 head, or 2 per cent smaller than in 1928, and slaughter of calves was 4,489,000 head, or about 4 per cent smaller. The 1929 decrease in slaughter was in cows, heifers, and calves; steer slaughter was larger than in 1928. The decrease in calf slaughter was largely in beef-type calves. Apparently the movement to increase cattle numbers is following the line of increasing breeding stock and of holding back calves of beef type, rather than of holding back steers.

Although the number of cattle on feed in the Corn Belt on January 1, 1930, was about 1 per cent less than on January 1, 1929, the total supply of cattle in that area which may be fed for market this year was somewhat larger than a year ago. This condition was brought about by the fact that the movement of stocker and feeder cattle into the Corn Belt during the last six months of 1929 was a little larger than in 1928, that larger numbers of cattle were raised in that area, and that on January 1 a larger proportion of the cattle were being roughed through (instead of being on full feed) than a year earlier.

Because of the lateness of the movement back to the country it seems probable that a smaller proportion of the cattle on feed January 1 will be marketed during the first three months of 1930 than in 1929. Market supplies of fed cattle during the first half of 1930, however, are expected to be about the same as in 1929. If there is a concerted effort on the part of dairymen to cull their herds more closely than usual, market supplies of slaughter cattle other than fed stock during that period will be larger than in 1929.

Market supplies of fed cattle, during the second half of 1930, will be determined to a considerable extent by the trend of cattle prices during the first four or five months of this year and by the trend of corn prices. The supply next summer and fall will probably include a larger proportion of light cattle than in 1929. Market supplies of grass and dairy cattle during the last six months of 1930 will probably be no larger than in 1929; whether slaughter of such cattle will be larger or smaller than in 1929 will depend upon the demand for stockers and feeders. Calf slaughter during the last half of 1930 will probably be smaller than in 1929.

There is no reason to anticipate any significant change in imports during 1930, although imports of slaughter cattle and calves from Canada and of stockers and feeders from Mexico increased slightly in 1929.

Cattle movements into the United States during 1929 totaled 509,000, an increase of 13,000 head over 1928 and of 55,000 head over 1927, according to records of the Bureau of Animal Industry. The 1929 arrivals represented slightly less than 1 per cent of the number of cattle on farms in the United States on January 1, 1930, or 6.1 per cent of Federally inspected slaughter in 1929. Stockers and feeders comprised about 68 per cent of the 1929 inspections compared with 71 per cent in 1928. Combined importations of dairy and breeding stock increased 29 per cent during 1929.

Conditions indicate that importations of beef into the United States during 1930 will at least equal those of 1929. The outstanding reasons for this expectation are: (1) South American beef production will be as large as, if not larger than, in 1929, especially in Argentina, which furnishes 50 per cent of the American canned-beef supplies; (2) the European market for South American beef gives no indication of material improvement over conditions prevailing in 1928 and 1929; and (3) the continued relatively favorable market for beef in the United States.

About 143,000,000 pounds of fresh, cured, and canned beef were inspected for entry into the United States during 1929, compared with about 129,000,000 pounds in 1928, and 80,000,000 pounds in 1927. Total inspections, therefore, nearly doubled in three years.

Supplies of fresh and refrigerated beef entering the United States during 1929 showed a decrease of about 25 per cent compared with 1928. This was brought about largely by decreased shipments to this country from New Zealand, but supplies from Canada were also materially reduced.

Demand for slaughter cattle during the first half of 1930 will probably be below that in the same period of 1929, but in the second six months it is likely to be nearer that of a year earlier. The recession in the consumer demand for beef, which began in the latter part of 1929, is likely to continue during the first half of the year at least. Improvement in demand during the remainder of the year will be largely governed by the extent that industrial activity increases and by the prices of other meats. Demand for feeder cattle in the spring months is not likely to equal the unusually strong

demand of last spring, but during the late summer and early fall probably will show an improvement over the corresponding period in 1929.

Demand for feeder cattle during the last half of 1929 was decidedly weaker than during the same period of 1928, particularly during the late summer and early fall. An increase of about 2 per cent in shipments to the country from leading markets during the last half of the year was accompanied by a decrease of about 11 per cent in feeder-cattle prices.

The general average of cattle prices in 1930 is likely to be slightly lower than that of 1929. Prices of the better grades of fed cattle probably will follow their usual seasonal downward course until the low point is reached in the late spring. This low point probably will not be much below the prices prevailing at the corresponding time last year. The seasonal advance on such grades, which usually comes in the second half of the year, may be retarded in the early summer as a result of a bunching of market supplies at that time. The high point of this advance is expected to be reached later than in 1929 and prices during the last quarter will average as high if not higher than in that period last year. Heavy cattle are likely to command a premium over lightweights of comparable grade.

Prices of lower-grade slaughter cattle are expected to score their usual seasonal advance during the first six months, but the extent of the advance will be influenced by the number of dairy cattle and calves that go to market during that period. But prices are not likely to reach levels as high as those of last spring. During the last half of the year the seasonal downturn in prices of these grades is not likely to carry the average below that of a year earlier.

The course of feeder-cattle prices probably will be similar to that of the lower grades of slaughter cattle. During the first half of 1930 average prices are likely to be lower than those of the corresponding period in 1929, but during the second half of the year prices probably will average about as high as a year earlier.

Considering the long-time outlook, the upward trend in cattle numbers promises to proceed at only a moderate rate during the next year or two and may not be reflected in materially increased slaughter until the latter part of 1931. It is difficult for cattle feeders to make adjustments during a period of increasing supplies and a declining price level. During the next few years, therefore, cattle feeders should exercise considerable caution.

It seems likely that the present relatively high level of cattle prices will induce the usual expansion of the industry, leading, within the next six years, to an overproduction and overstocking and a period of low prices and subsequent liquidation. During the years of increasing cattle numbers the greatest expansion is likely to occur in the central and western Corn Belt, where the greater attention to sweetclover and alfalfa culture and the impending cornborer infestation are working in the direction of distinctly larger forage production and heavier carrying capacity of pastures. Expansion is likely to be smallest in the old range country, where the range area has been reduced by an expansion of wheat acreage and the remaining range is already well stocked with sheep and cattle.

Farmers who contemplate entering a long-time cattle-raising program or those who contemplate an expansion of their cattle-raising business face a general increase in cattle numbers and a consequent lowering of prices. Although the expected effects of expanding numbers of cattle may be modified somewhat by a normal expansion in domestic demand caused by growth of population, any marked increase in cattle supplies is almost certain to be accompanied by a lowering of the cattle-price level.

If cattle growers continue their present policy of expansion through increasing the number of breeding stock and selling at younger ages, they will be in a position to make fairly quick adjustments in production by close culling of old cows whenever the price situation makes reduction desirable.

HOGS

Hog prices in 1930 are expected to average at least as high as in 1929, and possibly higher. A reduction in slaughter supplies is indicated, but this probably will be partially offset by a decrease in foreign and domestic demand for hog products. There are no indications as yet that the 1930 pig crop will result in slaughter supplies in the marketing year beginning with October, 1930, greatly different from those expected during the current marketing year. If, however,

the relationship between hog and corn prices becomes increasingly favorable during the next few months some increase in the fall pig crop of 1930 will probably occur.

Corn Belt hog production during the last three years apparently has shown only moderate changes and has been at a level which is well adjusted to corn production. Prospects for a better domestic demand, even with a less favorable foreign outlet for American hog products during the marketing year beginning next October, indicate that a pig crop in 1930 about equal to that of the last three years would probably result in returns to hog producers equal to the average of these years.

The estimated number of hogs on farms on January 1, 1930, was 52,600,000 head, or 7.5 per cent less than the revised estimate of 56,880,000 head on January 1, 1929. The decrease in the Corn Belt States amounted to 2,521,000 head, or 6 per cent.

The supply of hogs going to commercial slaughter for the marketing year ending with September, 1930, is expected to be somewhat smaller than that for the previous marketing year. The pig surveys of the department showed a decrease of about 6 per cent in the 1929 spring pig crop of the Corn Belt and an increase of about 4 per cent in the 1929 fall pig crop, or a total crop for the year about 3 per cent smaller than that of 1928.

The number of hogs on farms January 1, and the relationship of the corn-hog ratio in the different Corn Belt States to subsequent marketings from those States during past years, indicate a decrease in hog supplies larger than those shown by the pig surveys. The slaughter of hogs for the four months, October, 1929, through January, 1930, of the present marketing year also points to a considerably smaller total slaughter than in the previous marketing year. The conclusion from all these indications is that marketings from the Corn Belt States in the 12 months beginning with October, 1929, will be about 2,000,000 head smaller than during the preceding 12 months; that market supplies from outside the Corn Belt will be considerably smaller; and that the inspected slaughter for the present marketing year will be between 46,000,000 and 47,000,000 head, compared with 48,956,000 head in 1928-29 and 47,371,000 head in 1927-28.

Most of this decrease in slaughter will come during the first six months of the marketing year. Supplies from April to June will probably be larger and those from July to September smaller than those of the corresponding periods in 1929. Last year, supplies from April to June were an unseasonally small proportion and supplies from July to September an unseasonally large proportion of the year's slaughter. Apparently this was due partly to some holding back of supplies that usually would have been marketed in early summer in the expectation of a marked fall price advance, such as occurred in 1928; and partly to earlier marketings of 1930 spring pigs in response to the high September prices of the previous year, and to some liquidation of hogs in the fall from a number of districts where corn supplies in 1929 were very short. There are no indications that any of these factors is likely to recur in 1930.

Slaughter during October, November, and December, 1929, totaled 13,400,000 head compared with 13,950,000 head during the same months of 1928. Although slaughter in both October and November was larger than in 1928, the sharp decrease in December reduced the total for the three months 512,000 head, or almost 4 per cent below that of the same period a year earlier. A still larger reduction has taken place in January. Part of the decrease may have been due to weather and unfavorable transportation conditions.

The December pig-survey report on breeding intentions for the spring pig crop of 1930 indicated that the number of sows farrowing in the spring of 1930 will not be greatly different from the number farrowing in the spring of 1929. The increasing favorableness of the corn-hog ratio during December and January will tend to encourage producers to carry out those intentions. At present there is little reason to expect that the total pig crop of 1930 in the Corn Belt will be greatly different from that of 1929. The total tonnage of hog products from this pig crop, however, will be influenced by the size of the 1930 corn crop.

Storage supplies of pork on January 1 were 6.6 per cent, or 44,400,000 pounds smaller than those of January 1, 1929. Lard stocks showed a decrease of 3,700,000 pounds, or 4.3 per cent. Supplies of both, however, were well above the 5-year average for that date. Stocks of dry salt pork showed the largest decrease, being 25 per cent smaller than at the same time last year, and 2.5 per cent under the 5-year average. The decrease in total stocks of pork and lard of 48,000,000 pounds is equivalent to about 300,000 hogs.

Domestic demand for pork products was materially stronger in 1929 than in 1928. A reduction of 1 per cent in per capita consumption was accompanied by a 4 per cent increase in wholesale prices and a corresponding increase at retail. This is a larger price advance than would ordinarily accompany such a slight reduction in supply. Domestic demand for lard declined, however; per capita consumption was less in spite of lower prices.

The recent declines in business activity have not as yet seemed to affect hog prices. Any influence that the recession in business may have had on the demand for pork products has been more than offset by the existing higher retail prices for beef and prospective reductions of hog supplies. A continuation of unfavorable business conditions may reduce the demand for fresh pork, particularly pork loins.

Any reduction in demand for hog products during 1930, due to unfavorable business conditions, is likely to be reversed by business improvement during the 1930-31 season. Such improvement would partially offset any influence of a downward trend in beef prices that might be underway at that time.

There are indications that as the 1929-30 pork-marketing season advances, conditions in the European markets will become less favorable for the disposition of American pork products. United States exports of cured pork and lard probably will be smaller during the 1929-30 marketing year than during 1928-29. These unfavorable developments will not attain their full significance until the early part of 1930-31 season.

Outstanding points in the European pork situation are: (1) A tendency toward generally increased hog numbers, as indicated by some increases in breeding sows and young pigs, and some upward movement in current marketings; (2) a feed supply considerably larger than that of last year, with breeding encouraged by low feed prices; (3) a downward tendency in prices of hogs, cured pork, and lard; and (4) no indication of any significant increase in buying power in the leading markets for American pork products during 1930.

In Great Britain, the leading foreign market for American pork products, the cured-pork market already is feeling the effects of larger supplies coming from Denmark. As the current season advances, increased cured-pork supplies from the Netherlands are expected, and will probably have an additional depressing effect upon British market prices. It is anticipated, however, that the less favorable continental European market for American pork products, largely lard, will not be much in evidence before the last half of 1930, but will become increasingly marked during the winter of 1930-31.

The continental market for American pork products is influenced largely by conditions in Germany, where the upward turn in hog numbers, although delayed, is definitely established. Total German hog numbers appear to be about the same as a year ago, with a substantial increase in the number of young pigs but a decline in slaughter animals. Hog prices in Germany during the first half of the 1929-30 season are expected to hold up fairly well, with marketings probably slightly below 1928-29 levels. In the second half of the season, however, marketings should run about 10 per cent heavier than a year ago. Lard imports into Germany are expected to be near 1928-29 levels during the first half of 1929-30, and from 5 to 10 per cent below during the second half. In all European markets the current low level of lard prices reflects, in part, the increased competition from vegetable oils.

Because of the unusual distribution of market supplies of hogs during the last half of the marketing year ended with September, 1929, the seasonal downturn in hog prices last summer came earlier than usual. It also ended earlier and at higher levels than in the same period of 1928. The course of prices following the low point made in late November has been somewhat similar to the upward movement which took place after mid-December of 1928. The seasonal price advance now in progress seems likely to continue through the early spring to at least as high a point as prices reached last spring. If supplies for the period are as short as the greatly reduced marketings during December and January and the January 1 estimates of hogs on farms indicate even higher prices than last spring may be reached.

The seasonal decline which usually comes in the late spring and early summer may be greater this year than that which occurred last year. Marketings at that time are expected to increase more rapidly than during the same period of 1929, both domestic and foreign demand are likely to be somewhat weaker and supplies of beef will probably be in excess of the previous year.

With hog supplies next summer probably slightly less than last summer and demand for pork at home and abroad less favorable, the average level of hog prices from June to September will probably not be greatly different from that of a year earlier. The seasonal movement of prices may be more nearly normal than it was in the summer of 1929, however, and the peak of the summer rise is expected to occur later than it did in 1929.

The level of hog prices during the winter of 1930-31 is expected to be not greatly different from that prevailing this winter unless supplies prove to be considerably larger than present information indicates. The total tonnage of inspected slaughter in the marketing year ended with September, 1929, was 4.6 per cent greater than in the previous year. The market value of this slaughter exceeded that of the earlier year by \$133,147,000 or 13.3 per cent. Average price per 100 pounds paid by packers in 1928-29 was \$10.01 as compared with \$9.24 in 1927-28.

Corn Belt hog production during the three years, 1927-1929, apparently has shown but moderate change and present indications are for but little change in 1930. Yearly slaughter from this production is at a level of from 46,000,000 to 49,000,000 head. Hog prices for this volume of slaughter have been high enough to pay an average return on corn fed by reasonably efficient producers but has not been high enough to encourage hog production outside the Corn Belt. In view of the probable less favorable export outlet for American hog products in 1931, an increase in production in 1930 would seem undesirable; but a production not greatly different from that in 1928 and 1929 will probably result in returns about equal to those years and apparently is well adjusted to Corn Belt corn production. If corn production in 1930 considerably exceeds that of 1929 the relationship of hog prices to corn prices will tend to increase numbers of hogs in 1931, assuming that Corn Belt hog producers are likely to react to such a situation as they have in the past. This would result in larger supplies and a lower level of hog prices in the marketing year 1931-32.

DAIRY PRODUCTS

Dairymen face a period of readjustment. An annual increase of about 1 per cent in milk-cow numbers is necessary to increase production sufficiently to balance increasing demand, but the number was increased 3 per cent in 1929. The number of heifers, 6 per cent greater than a year ago, is sufficient to cause still further increases in cow numbers in 1930. Although the underlying situation is not so bad as would appear from current butter prices, the duration of the period of readjustment will depend partly on the promptness with which producers adjust their methods to meet the situation, by close culling out of their old or low-producing cows, and by either marketing a larger quantity of milk in the form of veal or, in the beef sections, allowing more calves to run with the cows. With present lower butter prices, dairy cows will be fed less purchased grain this winter. Unless dairy herds are closely culled and more of the less desirable heifers sent to slaughter, there will be a further increase in the number of milk cows during 1930 and 1931.

Over a longer period the general dairy outlook is unfavorable because of the large number of heifers now on hand and being raised, and because of the probability of a marked upward trend in beef production during the next five years or more. There is an increasing number of dual-purpose cows which will be milked whenever the price of butter is sufficiently high and the price of meat animals is sufficiently low. On the whole, a conservative policy in regard to raising dairy calves is called for. Probably more calves were raised in 1928 and 1929 than can be raised to advantage hereafter. Dairymen who have to buy dairy cows will probably be able to buy replacements at less cost in two or three years than they can now.

Total milk production for all purposes in 1929 was apparently only slightly in excess of 1928. In the eastern market-milk areas production was slightly below 1928 until about September, but well above 1928 after that. In the areas chiefly devoted to manufactured dairy products, production exceeded 1928 during the favorable pasture season and averaged about the same as 1928 during the remainder of the year; the year closed with production generally showing slight increases over 1928.

Production of manufactured dairy products in 1929, in terms of milk equivalent, was about the same as in 1928. Estimates for the year show increases of about 2 per cent in creamery butter production, 8 per cent in condensed and evaporated milk, and a decline of 14 per cent in cheese production.

Trade output, or the quantity of butter absorbed by our markets, is estimated to have declined about 1.5 per cent. Until April about the same quantity was consumed as in 1928, but afterwards the rate of consumption was less, and with increased production, the largest storage stocks on record, amounting to 169,000,000 pounds on September 1, were accumulated. At the close of the year these stocks had been reduced to 82,000,000 pounds but were still 38,000,000 pounds heavier than a year earlier. Prices were about the same as in corresponding months of 1928 through April; from April until October they followed the usual seasonal course below the level of 1928 by 2 or 3 cents; then prices declined instead of making their usual seasonal rise. Coincident with the decrease in the trade output of butter, there has been a corresponding increase in the production of butter substitutes.

Trade output of cheese in 1929 was about 7 per cent less than in 1928. The decline in production was even greater and stocks were reduced during the year. Prices of Cheddar cheese, although the lowest since 1922, did not show as marked declines as took place in the price of butter.

Trade output of condensed and evaporated milk increased approximately 4 per cent during the year. The increase in production was somewhat greater and stocks at the close of 1929 were much above those of 1928. Prices were not materially different from corresponding months of 1928 until August, when reductions, which were maintained for the remainder of the year, took place.

About the same quantity of milk appears to have been taken by city consumers for fluid-milk consumption as a year ago, at retail prices which were generally the same as in 1928.

The number of milk cows in the United States, after remaining practically stationary for several years, increased about 3 per cent during 1929. Including some heifers 2 years of age but not yet in production, the number of milk cows on January 1 was about 22,499,000 compared with around 21,800,000 on that date during the three preceding years. The increase appears to have been shared by all sections of the country, except for localities that are suffering from a shortage of feed. Perhaps a third of this increase has resulted from the bringing into production of an increased number of heifers; the remainder of the increase apparently is due to a continued decrease in the number of old cows sold for slaughter.

This tendency to keep more cows does not appear to have been checked. The price of milk cows is still high and December stockyard receipts of cattle from the dairy States still showed abnormally small numbers. Tendency toward expansion of milking herds is also shown by the fact that practically all States report an increased number of yearling heifers being kept for milk cows, the increase in the country as a whole being about 6 per cent. The total number of such heifers on the farms on January 1 is estimated at approximately 4,669,000, compared with 4,413,000 on January 1, 1929; 4,184,000 in 1928; and 4,059,000 in 1927. The number of heifer calves on hand, although less significant, seems to indicate that fully as many heifer calves were saved in dairy States in 1929 as in the previous year, and up to the first of the year the stockyard receipts of calves from the dairy States seem to indicate that farmers were still saving rather more than the usual number of calves.

Indications are that the previous upward trend of production per cow was continued through 1929 in fluid-milk areas, but that in butterfat areas this trend did not continue after the first half of the year, partly because of poorer pastures after midsummer and partly because of higher feed prices and lower product prices in the fall.

The increase in production in the North Atlantic States in the fall of 1929 appears to have been due to the fact that farmers adjusted their program in expectation of a fairly strong market for fluid milk during the fall and winter months. In so far as there has been an increase in fall freshening some decrease in production later in the year is to be expected. In the United States as a whole, production per cow increased materially from 1925 to 1927, but has increased only slightly since then.

Production of milk in 1930 will depend largely on the extent to which farmers adjust their methods to the change in prices. The number of milk cows on farms will probably increase for another six months at least, but this will probably be partially offset by allowing the calves to have more of the milk. A gradual shift in feeding methods is taking place, as indicated by the slow sales of bran and cottonseed meal at declining prices since the middle of September. A further decrease in the quantity of grain fed is

expected and this will tend to reduce milk production, especially during winter months. Production during the summer months will depend largely on the condition of pastures, and for the country as a whole there seems as yet no reason to expect these to average poorer than they were last season, when pastures were about the same as the 5-year average. On the whole, if farmers react to prices as they usually do, milk production will probably be slightly less in 1930 than in 1929 and the dairy situation should show considerable improvement before the end of the year, but with a larger number of dual-purpose cows in prospect it will be increasingly difficult to maintain the price of dairy products quite as high as in 1928 and the first half of 1929.

Although demand for fluid milk and cream averaged about as high in 1929 as in 1928, reduced buying power of consumers in the first half of 1930 may reduce the demand for fluid milk and cream, but this decline in demand will probably be temporary and the long-time upward trend in demand will probably continue. Demand for butter decreased somewhat during the first 10 months of 1929 in comparison with 1928 and markedly during the last two months. The drop in wholesale butter prices since early October has only recently been followed by corresponding reductions in retail prices, and for that reason current wholesale prices somewhat overemphasize the drop in consumer demand. Now that retail prices are being reduced, consumption will tend to increase and move the surplus stocks into consumption and relieve the present demoralized situation in wholesale markets.

Although material improvement in the purchasing power of consumers is not expected before the second half of 1930, butter and cheese markets have probably felt the worst of the depression. Demand for fluid milk and market cream will probably show some decline in the first half of 1930 as compared with the first half of 1929. Thereafter the demand for all dairy products should tend upward, and during the 1930-31 season may recover nearly in full to its long-time upward trend.

Foreign dairy production has recovered from the disturbances arising out of the World War with a rather marked check during the past two years in the rate of increase, and is now comparatively stable, with prospects of only gradual and moderate increase in supplies. Butter prices in foreign markets have likewise been stable during recent years. The widest yearly average margin of 11 cents between New York and Copenhagen was reached in 1927, with this margin narrowed to 9 cents in 1928, and to 8 cents in 1929. Abnormally low foreign prices relative to prices of earlier years during the winter of 1929-30 to date, apparently caused by a weakening of demand in the principal European deficit areas, is at present the most unfavorable aspect of the situation as affecting foreign competition in the dairy industry.

Imports into the United States of milk, cream, cheese, casein, and butter during the fiscal year 1928-29 were valued at \$38,000,000, and domestic exports, principally of concentrated milk, at \$18,000,000. There was an excess of imports over exports equivalent to more than 1,000,000,000 pounds of milk, or practically the same as during each of the last four years. With a continuation of normal foreign dairy production, only such foreign supplies as have a well-established market in this country will be attracted to the United States during the earlier part of the year, and by the time the domestic market has recovered European demand may be expected to have made corresponding improvement. Accordingly, competition from foreign supplies within the United States will probably be lessened rather than intensified during the coming year, yet butter prices would have to drop materially lower than at present before significant exports could take place.

Fluid-milk prices to farmers have been depressed to some extent, although the surplus-price situation will probably improve, its effect on milk prices may be offset by further reduction in consumptive demand for milk and cream during the next few months. Unfavorable product prices will probably tend to reduce production through the late winter and spring, which may counterbalance to some extent the reduced demand. But the immediate outlook is not very favorable, and producers in fluid-milk districts should consider all possible economies in production by eliminating poor animals and generally following a cautious production policy.

The immediate outlook for butterfat and cheese districts is more hopeful than present prices would indicate. With reduced retail prices, consumption will tend to increase; and winter production will probably shrink in response to the present unfavorable returns. A further downward trend of butter

prices during the coming season is not probable, and somewhat higher prices may be realized. Particularly if industrial activity shows marked recovery in the second half of 1930, butter and cheese prices may show the usual fall advance, much as they did in the winter of 1925-26 following a price depression in the fall and winter of 1924-25.

The long-time outlook for dairying is still affected by the present position of the beef-cattle cycle, and the possibility of a downward trend in cattle prices during the coming 5 years or more. The last 3 years has constituted a period of reduced numbers of beef cattle and high prices for cattle and sheep. As a consequence there has been less incentive than usual for producers of meat animals to engage in dairy production. During the next 5 to 10 years the reverse situation may be in evidence, with many producers or feeders of meat animals turning to dairying to augment their incomes.

The long-time outlook for fluid-milk districts adjacent to large cities, where further expansion of population will call for greater quantities of fluid milk, is perhaps more favorable than in the districts devoted to the production of manufactured dairy products. Some recognition should be made of the fact that more and more of the fluid-cream demands are being met from outside districts; but how far this will go is uncertain. Feed prices, which have been unusually favorable to dairymen during recent years as a whole, may become less favorable with increasing numbers of animals, but even so, the long-time outlook is for relatively low feed prices.

In butterfat and cheese producing districts, the long-time outlook is less favorable than in fluid-milk districts. With downward trend in prices of meat animals, many farmers with dual-purpose herds may turn more attention to cream production. To a certain extent marginal districts between fluid milk and butterfat are finding greater outlets for their product as sweet cream for shipment; in these favorably located districts the long-time situation is more promising, but in the true butterfat districts men who are planning long-time expansion in their dairy enterprises would do well to base their plans on prices for butterfat somewhat below those of the seasons prior to 1929.

The present long-time outlook for dairy products does not encourage expansion of dairy production in those cash-crop areas where dairying has been unable to make much headway during recent years, as it is unlikely that the relation of butterfat prices to cash and feed-crop prices will be as favorable during the next five years as it has been during the last five. Areas in which dairying has been gradually increasing as a livestock enterprise to supplement cash crops may well continue that development, with even greater emphasis than before on the production of feed crops to balance the livestock.

The present situation calls for both economy in production and caution in plans for the future. The high prices for meat animals still favor the elimination of inefficient cows. An unusually heavy culling at this time is desirable to help correct the temporary oversupply of dairy products. At the same time, enough dairy heifers are now being raised to maintain dairy-cow numbers during the next few years at a point to produce as much product as can be sold to advantage. Further increases in the numbers of heifer calves being raised is therefore undesirable, as prices of both beef and dairy cows are likely to be at materially lower levels than at present before those cows are ready for sale or use as producers.

SHEEP AND WOOL

It appears that the high point in the expansion of sheep numbers in the United States has about been reached. A new annual record slaughter of sheep and lambs is expected within the next two years and it seems improbable that prices for these increased supplies can be maintained at the high levels of the last three or four years.

The increase in world wool production which has occurred in recent years, will probably not continue much further and some reduction is expected by 1931. Production in 1930, however, will probably not be greatly different from the high productions of the last two years. It is likely that demand conditions, which are unfavorable at present, will begin to improve in the last half of 1930, and will more favorably affect the marketing of the domestic clip of 1931 than that of 1930.

The outlook for the sheep industry suggests that the readjustments which will take place as a result of reduced price levels should be effected gradually in order that the market may not be unduly depressed by temporary seasonal

gluts. In the past, periods of low prices, such as those now prevailing for wool and as seem probable for lambs, have been followed by higher prices a few years later.

Sheep numbers in the United States continued to increase during 1929, but the increase of 1,400,000 head was the smallest in the last four years. There were probably as many sheep (including lambs) on farms January 1, this year as on that date in at least 30 years. Of the 48,913,000 head as estimated on farms January 1, 1930, some 5,490,000 head were estimated on feed for market. This was the largest number estimated on feed in eight years and was probably almost as large as in any previous year.

In spite of increased sheep numbers the estimated lamb crop last year (25,976,000) was about 1 per cent smaller than that of 1928. The native crop was larger but, primarily because of unfavorable weather, both at mating and lambing time, the western crop was considerably smaller. The Western States, with about 69 per cent of the sheep population, reported a 1929 lamb crop of 16,645,000 head, as compared with 9,331,000 head saved in the native States.

Lamb slaughter from the 1929 crop up to January 1 was about 450,000 head larger than the slaughter of 1928 lambs for the same period. In addition there were about 700,000 head more lambs on feed January 1 this year than last year. The total lamb slaughter from the 1929 crop will thus probably exceed that from the 1928 crop by at least 1,000,000 head.

The increase in lambs on feed this year was largely in Colorado and other Western States, including western Nebraska. In the Corn Belt States, excluding western Nebraska, the total number on feed was about the same this year as last, as increases in some States were offset by decreases in others. Because of unfavorable weather during October and November, the lambs in Colorado and western Nebraska made small gains and the movement of fed lambs back to market from these areas may be somewhat delayed and is likely to be unusually large during February, March, and April.

Because of drought, conditions in California until the end of December were unfavorable for the development of the early lambs in that State. Present information indicates that the number of such lambs is about as large as that of last year; but their condition and the time they will begin to move to market will depend largely upon developments in the feed situation during February and March. If abundant grass is available for the rest of the season it seems probable that the supply for eastern shipment will be as large as last year, and that volume movement east will begin at about the same time.

Conditions to the end of January in other early-lambing areas in the West averaged at least as good as last year. They were better in Idaho but poorer in Oregon and Washington, and they were average or above in the Southeast. So far as feed and weather conditions to date in the native sheep States are a factor, there is no reason to expect a smaller native lamb crop in 1930 than in 1929. If average conditions prevail until after lambing time, the western lamb crop of 1930 will probably exceed that of 1929.

The upward trend in consumer demand for lamb that has been under way during the last few years is not expected to continue through 1930. Indications are that the 1930 level will be below that of 1929. A slackening in this trend began to develop during the latter half of 1929 and was particularly noticeable near the end of the year. For 1929 as a whole, however, retail demand averaged above that of 1928, with per capita consumption increasing by 4 per cent and retail prices by 2 per cent during the first 11 months as compared with the same period a year earlier.

Among the unfavorable developments for western sheepmen during recent months has been the reduction in the demand for ewe lambs and old ewes for flock replacement and expansion. Although in previous years ewe lambs commanded a premium of \$1 to \$2 per 100 pounds over the prices paid for wether lambs of the same type, they now sell for but little more.

Supply-and-demand conditions point to a level of lamb prices during the next few years lower than that in 1929, although the downward course of the market may be checked somewhat as a result of the improvement in business conditions that is expected to start toward the middle of 1930. Partly, at least, because of the high prices of other meats during the last two years, lamb prices have continued relatively high in spite of relatively large supplies. Indications are that the prices for some of these competing meats, such as veal and poultry, will not continue at their recent high levels through the next few years, but unless sheep and lamb liquidation is unusually drastic, no such sharp price declines as took place in 1920 and 1921 are expected. Lamb prices at

Chicago during December, 1929, the first month of the fed-lamb season for the 1929 crop, averaged 7 per cent less than in December, 1928.

The average price of sheep and lambs slaughtered during the fed-lamb season for the 1928 lamb crop, December, 1928, to April, 1929, inclusive, was \$15.03 per 100 pounds, compared with \$13.88 paid in the corresponding period a year earlier. Federally inspected slaughter in the first-mentioned period was 1 per cent greater than that of the earlier period.

The average price paid for sheep and lambs slaughtered during the grazing season for the 1929 crop of lambs, May to November, 1929, was \$12.21 per 100 pounds, as compared with \$13.21 paid in the same period of 1928, and \$12.84 paid in that period of 1927. Federally inspected slaughter in the 1929 grazing season exceeded that of 1928 by 4.8 per cent and that of 1927 by 13.3 per cent.

The decrease of approximately 7 per cent in the prices paid thus far for slaughter lambs from the 1929 crop, as compared with those paid in the corresponding period of 1928, is largely a reflection of reduced wool prices and the reduced demand for feeder lambs of terminal markets and for breeding stock for flock expansion. The average wholesale price of dressed lamb at New York during the eight months from May to December, 1929, was only about 1 per cent less than the average for the same period in 1928.

Prices paid for feeder lambs from the 1929 crop as indicated by the monthly average at Chicago during the last half of 1929 were 5.7 per cent, or 75 cents below the prices paid in the same period of 1928.

WOOL

Present indications are that the 1930 world wool production will not be greatly different from the large productions of 1928 and 1929. Production has been increasing rapidly during recent years, the total in the important countries (exclusive of Russia and China) rising from 2,566,000,000 pounds in 1923, to 3,213,000,000 pounds in 1928. Most of this increase occurred in countries of the Southern Hemisphere and the United States. Both domestic and foreign production of fine wools increased more than that of medium and coarser wools. In view of present low wool prices, material further expansion is not to be expected and some decrease is likely by 1931. Several of the large wool-producing countries of the Southern Hemisphere are subject to more severe droughts than have occurred in recent years and a recurrence of one of these periods could reduce their sheep numbers materially in a short time.

In the United States the estimated production, including pulled wool, increased from 264,000,000 pounds in 1922 to approximately 355,000,000 pounds in 1929. Present prices for wool will probably discourage further expansion during the next few years but it is not likely that the spring clip in 1930 will be any smaller than it was in 1929.

World supplies of combing and clothing wool for the 1929-30 selling season are estimated at about $1\frac{1}{2}$ per cent above those for the preceding season. The increase in supply is accounted for largely by the heavy carry-over of stocks in the primary markets of the Southern hemisphere since production was approximately the same as in 1928. Because of the extension of the Australian selling season for the 1929 clip, a larger quantity of wool than usual will probably be sold from that country in the coming spring about the time the 1930 United States clip starts to move to market.

Demand for wool by important foreign consuming countries was lower in 1929 than in 1928 and has continued downward into 1930. Little immediate improvement in either foreign or domestic demand for wool is expected but some increase may develop in the latter half of 1930 as business conditions improve.

With the increasing domestic production the trend of imports of combing and clothing wool into the United States has been downward although for the first 11 months of 1929 imports amounted to 98,000,000 pounds compared with 84,000,000 pounds in the same period in 1928. The consumption of combing and clothing wools in the United States was also larger in 1929. The increase during the first 11 months in mills reporting to the Bureau of Census (representing from 75 to 80 per cent of the wool-manufacturing industry in this country) amounted to 35,000,000 pounds, or 11.6 per cent over the corresponding period a year earlier.

Forty-six per cent of this increased consumption of 35,000,000 pounds was domestic wool and 54 per cent was foreign wool. There was a decrease of 13,000,000 pounds in the consumption of domestic wools grading 60's (one-half

blood) and lower, but this was more than offset by an increase of 21,000,000 pounds in the consumption of foreign wools of the same grades. As a result, the proportionate consumption of domestic wools of these grades dropped from 81 per cent to 72 per cent. On the other hand, the consumption of domestic wools grading 64's (fine) and above increased 29,000,000 pounds while that of similar grades of foreign wools declined 2,000,000 pounds. This raised the relative proportion of domestic fine wool consumption from 85 per cent in the first 11 months of 1928 to 89 per cent for the same period of 1929.

World wool prices fell during 1929 and the tendency of the market in early January, 1930, was still downward. Declines were relatively greater on the fine than on the medium grade wools. Prices of wool in London at the close of the wool auctions in December, 1929, were from 20 to 33 per cent below those at the opening sales in January, 1929. The greatest declines (over 30 per cent) were on wools grading 56's and higher. Prices of wools grading 46's to 50's declined about 24 per cent and those for wools grading 36's to 44's dropped about 20 per cent.

Following the general course of world wool markets, prices of wool at Boston declined sharply in the early half of 1929, steadied in the early autumn, and resumed the downward movement in the last part of the year. Prices of fine (64's) wools were from 24 to 26 per cent below those at the opening of the year, and the range in declines on the grades coarser than 64's was from 20 to 24 per cent. The margin of domestic prices over foreign prices was high throughout 1929 and the margin on medium wools was greater than on fine wools.

Prospective world supply and demand conditions do not indicate much immediate improvement in the wool situation, but the expected revival of business conditions after the middle of 1930 gives encouragement for anticipating an increased demand for wool in 1931. A review of the trends in sheep production in the United States during the last six or seven years indicates that the peak in the period of expansion in numbers in the Western States has about been reached. The limitations of available range make improbable any considerable further expansion there; such expansion could come only from relatively high cost production, and present conditions in the industry do not encourage such production. Although it may be possible for efficient sheep producers in the native States to make a profit with farm flocks, even at the present level of prices for lambs and wool, it does not appear to be a propitious time for them to expand their operations because any movement that will result in increased marketings of lambs during the next three years would probably tend to further depress lamb prices.

If the present number of breeding ewes in the United States is maintained and all sheep and lambs are sold each year except enough to maintain such a number, inspected slaughter during the next few years will probably exceed that of the crop-marketing year 1929-30 by around 2,000,000 head, and the total yearly Federally inspected slaughter will be between 16,000,000 and 17,000,000 head. It hardly seems probable that such a supply can be disposed of at the level of prices prevailing during the last three or four years.

The new price level will be determined by the supply and price of other meats, especially veal and poultry, by the extent to which consumer demand for lambs may be increased by such methods as may be adopted for influencing it; by the changing level of consumer purchasing power, and by the level of wool prices. As this new level of lamb and wool prices is being established, present high-cost sheep producers who can not operate under these conditions will be forced to reduce their operations. This process of reduction will temporarily increase the slaughter supply of sheep and lambs above what it would be on a replacement basis and reduce prices below what they would reach if no liquidation developed. As a result, reduction may be greater than necessary, and it may be some years before the industry is on a stabilized basis of production.

The prospective increase in cattle production, with its accompanying decline in cattle prices during the next seven or eight years, makes it appear inadvisable for sheepmen to shift from sheep to cattle at this time, because the upward trend in lamb prices is expected to get under way again before the next general advance in cattle prices begins.

A clear understanding of the present situation, both by sheep producers and by organizations interested in financing the industry, is highly desirable. The adjustment to the new level of slaughter should be as gradual as possible

and should not be made more difficult by forced liquidation. Any curtailment of credit that tends in this direction might result in greater risks than one based on a policy of permitting an orderly readjustment of production.

MOHAIR

The outlook for mohair producers is not as satisfactory as it has been in recent years. Production of mohair in the United States increased materially and is now approximately equal to the average consumption in the United States for the last six years. Domestic consumption has been declining since 1926, but at present prices, mohair appears to be more desirable for many purposes than alternative materials. Therefore, domestic consumption is expected to increase somewhat during 1930, but, with large supplies available, the demand will probably not be strong enough to support prices at high levels. Imports have been decreasing in recent years.

Prices of domestic mohair at Boston declined steadily during 1929, and prices of all grades of mohair were fully 20 per cent lower in December than in January, 1929. First combing domestic mohair declined from 78 cents a pound in January to 61 cents in December. Turkish fair average mohair at Boston (in bond subject to duty) declined from 51 cents a pound to 39 cents in the same period. The margin between domestic and foreign mohair prices has narrowed during the year. If the United States mohair industry ceases to be on an import basis, domestic prices are not likely to continue materially above world prices.

Mohair production has increased rapidly since 1922 in the United States, which has now become the principal mohair-producing country in the world. A preliminary estimate for 1929 places the clip above 16,000,000 pounds compared with 14,500,000 pounds in 1928 and 8,500,000 pounds in 1922. At the present rate of increase in production the 1930 clip would exceed the average consumption in the United States during the years 1922-1929. On the other hand, consumption has been declining from the high point in 1926 so that the large clip of 1929 was moved largely through considerable reductions in price.

The trend of mohair production has been downward in the Union of South Africa and upward in Turkey. In the six years 1923-1928 the production in South Africa declined from 16,000,000 to 9,000,000 pounds and that in Turkey increased from 6,000,000 to 10,000,000 pounds. However, the Turkish clip declined to 8,600,000 pounds in 1929 and the South African clip increased from 9,000,000 to 10,000,000 pounds in 1929.

The supply of Turkish and South African mohair is considerably larger than last year. Stocks of mohair in Turkey were estimated to be over 5,000,000 pounds on December 1, 1929, or about 18 per cent greater than in 1928, when stocks in Turkey were unusually heavy. Stocks of foreign mohair in bonded warehouses in Boston on December 1, 1929, amounted to less than 3,500,000 pounds compared with slightly over 4,000,000 on December 1, 1928.

The narrow margin between domestic and foreign prices has prevented larger imports of mohair into the United States. Imports were small during 1929, amounting to only 2,000,000 pounds compared with 11,000,000 pounds in 1926.

Demand for mohair fabrics for automobile and furniture upholstery declined during 1929 compared with 1928, but the demand for mohair linings for wearing apparel has remained fairly steady and undelivered orders appear to be about the same as last year. At present prices, mohair is considered to be more desirable for many purposes than alternative materials. There has been some increase in the use of mohair and mohair mixtures in the upholstery of the new automobile models shown recently for delivery in 1930.

HORSES AND MULES

The outlook for horses and mules is primarily one in which long-time factors predominate. The number of horses and mules on farms will continue to decline for six years at least; whether it continues thereafter will depend upon whether births continue at about present or lower levels, or increase materially within the next few years. The decreasing use of land for agricultural purposes in Eastern States releases work stock for use on the more favorably situated farms. The increasing use of and improvements in tractors, combined harvesters, and other power-operated equipment, the increase in the size of the

farms, and expansion of improved roads, all mean a replacement of horses and mules by mechanical power. As long as the mechanization of agriculture is able to keep pace with the decreasing numbers of work animals, it is not likely that the prices of work stock will advance materially, except in those areas where special conditions render difficult the use of mechanical power.

Average farm prices of both horses and mules for the United States during 1929 have been slightly lower than during 1928, but they remained above the prices of 1927. Reports from key markets in the Middle West indicate an increased demand for both horses and mules during 1929. Liberal supplies and higher prices than in 1928 prevailed at these markets during the year. Most of the advance in horse prices in these key markets was for active horses of medium weight, suitable for farm work. The January 1, 1930, farm prices of colts 1 year old and under 2 years showed increases over a year ago of 2 per cent in the East North Central States, but no appreciable change was in evidence in the West North Central States.

Mechanization of agriculture is resulting in a much more highly localized market for horses than for mules. There is a more definite and regular movement of mules from the producing States to the cotton States east of the Mississippi River, consequently the changes in mule prices in 1929 compared with 1928 have been reasonably consistent in the several States of deficit mule production. The farm prices of horses, frequently show changes in opposite directions in two adjacent States.

The number of horses and mules on farms continued to decline during 1929. Reduction in the number of horses from January, 1929, to January, 1930, was about 465,000 head, or 3.3 per cent; the number of mules declined about 68,000 head, or about 1.3 per cent. Sharp declines in numbers of mules are indicated in the mule-producing States. This decline in the number of horses and mules has followed the general downward trend forecast by the outlook reports of the last several years. Indications are that the number will be reduced from about 25,000,000 in 1920 and 19,000,000 at present to about 10,000,000 to 11,000,000 or less by 1940, providing births continue at about present or lower levels. With the maximum increase that could occur under the stimulus of the most rapidly possible rising prices, the number by 1940 would not exceed 14,000,000 or 15,000,000.

During the recent years of rapidly declining numbers of draft animals, their prices have not been sufficiently high (in view of alternative opportunities for the use of feeds) to stimulate production even under the most favorable conditions as found in the former surplus-producing district of the western Corn Belt. It is doubtful whether prices to be expected within the next few years will offer a substantially stronger inducement.

Increased interest in horse breeding has been observed in some parts of the country, but the number of colts on farms continues to decline at about the same rate as the number of older work stock. Information obtained from some 300,000 farmers on December 1, 1929, indicates that the number of colts raised in 1929 was smaller than the number raised in 1928. The ratio of the number of colts under 1 year to the number over 1 and under 2 years in the North Central States was about 45 to 55. Stallion registration decreased about 8 per cent from 1927 to 1928 and registration of jacks declined about 20 per cent. Some increase in service was reported, but efforts to increase horse breeding are seriously handicapped by the limited number of suitable breeding mares.

A sharp increase in receipts of horses and mules for October, November, and December, at the three principal markets of the Southeastern States, was accompanied by well-sustained farm prices for mules. This situation undoubtedly reflects the somewhat larger yields per acre of cotton in 1929 in these States and may result in a strengthening in the prices of mules during the next few months. The decrease in the number of horses and mules on farms since 1918 has released approximately 20,000,000 acres, or 5.5 per cent of the total crop acreage in 1929, for uses other than that of growing feed for work animals. By 1940 it is possible that the further decline in numbers of work stock will result in the release of an additional 20,000,000 to 30,000,000 acres.

POULTRY AND EGGS

Any increase in production of chickens in 1930 for the country as a whole over the production of 1929, either for eggs or meat, will tend to reduce prices of poultry and eggs below the levels of recent years.

The volume of egg production during the year 1930 promises to exceed that of last year by an amount corresponding somewhat to the increase of about 5 per cent in the number of chickens. Larger prospective egg production indicates that prices lower than last year are probable, although the demand for storage should be good and the volume of spring consumption should be fully as large as last year.

With an increase of 10 per cent in numbers of chickens raised in 1929, with marketings correspondingly heavier, and with greatly increased cold-storage holdings, poultry prices during the first half of 1930 will probably remain below levels prevailing during the corresponding period of 1929. In case of an improving business situation in the latter part of the year, the demand for poultry should be fair, although probably not so good as during the last two years. The price in the fall of 1930 will depend mainly on the number of chickens raised this year. The fall outlook will be discussed in the report on poultry to be issued in July. The annual estimate of numbers of chickens on hand January 1, and estimates of intended commercial hatchings will be issued in February.

Present indications are for a level of prices for poultry feeds during the first half of 1930 not very different from those prevailing in 1929.

The relatively high price for lamb and the steadily increasing prices for beef during the five years 1925-1929, have been offset to some extent by recessions in the price for hogs; but in general the price levels of meats other than poultry have been high and have helped the market for poultry and eggs. The general trend of meat prices seems likely to be somewhat downward during the next five years especially for beef, veal, and lamb; therefore the prices of poultry products will lack the support they have had during the past five years from the high or rising prices of other meats.

The number of chickens on farms on January 1, 1930, was greater than on January 1, 1929, by about 5 per cent according to early indications.

On December 1 the average number of birds in laying flocks in all sections of the country showed a moderate increase over numbers on December 1, 1928. In the North Central States, having about half of the chickens in the United States, the average number was 3 per cent above the previous year and the same as in 1927. In the North Atlantic States, December, 1929, numbers were 7 per cent higher than in 1928; in the Western States 4 per cent higher; and in the South about 3 per cent higher. No definite information on change in numbers of birds in commercial flocks is available at present.

The cost of feed entering into the poultry ration, which had fallen slightly below the 5-year (1923-27) monthly average during the later months of 1928, rose slightly above the average in February, 1929. Except for the month of June, it continued slightly above the corresponding monthly average each month of 1929 up to November, when it fell to 1 per cent below and in December 2 per cent below the average cost in the corresponding months of 1923-1927.

Present indications are for a level of feed prices during the first half of 1930 not much different from that in the corresponding period of 1929. Total production of feed grains in 1929 is less and total requirements for livestock feeding seem likely to be somewhat less, but the combined general price level of all products is lower than a year ago. In December prices of corn and oats were slightly higher, and of wheat considerably higher, whereas barley, bran, and other concentrates were considerably lower than in December, 1928.

EGGS

The number of eggs laid per bird as reported for the flocks of crop reporters averaged in 1929 about 3 per cent greater than in 1928; every month except March showed an increase over corresponding months in 1928 until November and December, when 1929 layings per bird fell below the 1928 figures. It is probable that the decrease in the last two months was due in part to the relatively larger additions of the late-hatched pullets to the laying flocks in 1929, the flock increase for the two months being 14 birds in 1929 compared with 10 birds in 1928. The relatively lower rate of laying in November and December may not continue after the pullets come into full production.

Total production of eggs per farm flock as reflected in the monthly reports for the flocks of crop reporters averaged only slightly smaller during 1929 than in 1928, the difference in eggs gathered being less than 1 per cent al-

though the average number of hens in these flocks was about 4 per cent less. Total layings per flock in 1929 were lower than in 1927 by about 4 per cent.

Receipts of eggs at the four principal markets during 1929 were 14,940,000 cases, or 3 per cent less than in 1928. Receipts for the three months, October, November, and December, 1929, combined, were about 2.4 per cent less than in the same months of 1928. In December they forged slightly ahead of that month of 1928.

The storage-egg situation has been a favorable market factor during the fall and winter of 1929. Peak holdings of shell eggs on August 1 were about 8,958,000 cases, or 15 per cent (1,500,000 cases) less than in 1928 and about 11 per cent below the 5-year average. Holdings on January 1 were only 710,000 cases, or 50 per cent less than on January 1, 1929, and 42 per cent less than the 5-year average.

Stocks of frozen eggs at the peak of holdings on August 1, 1929, amounted to 91,000,000 pounds, or about 12 per cent more than on August 1, 1928. This excess was equivalent to 286,000 cases. By January 1 of this year holdings of frozen eggs had decreased to 53,644,000 pounds, a quantity 4.5 per cent less than on January 1, 1929.

Exports of shell eggs for the first 11 months of 1929 were 380,000 cases compared with 637,000 for the corresponding period of 1928, this year's exports being about 0.5 per cent of our domestic production. Exports are shipped mainly to Argentina, Cuba, Mexico, and Panama, and come mostly from the Pacific coast and the Middle West.

Imports of shell eggs are so small as to be of little significance. Imports of frozen and dried eggs are in considerable volume, although the quantities involved comprise a relatively small part of the total egg supply, being equivalent to less than 2 per cent of our total production. China furnishes the bulk of these imports. Prospects point to a maintenance of the present volume of imports of dried eggs during 1930. Exports from China of frozen eggs have been mostly to Europe during recent years and no increase in imports of these to this country is anticipated.

The farm price of eggs during 1929 from March to October was about 15 per cent above the prices in the corresponding months of 1923-1927, but only 5 per cent above during September and October, and finally in November and December of 1929, 2 per cent below the 5-year average. But because of fewer hens and shorter supplies of market eggs, prices during the later months of 1929 were well above the corresponding months of 1928.

Since the cost of the poultry ration was but little above average during most of 1929, the egg-feed ratio followed closely the level of egg prices.

Volume of egg production during the year 1930 promises to exceed that of 1929. The increase in numbers of birds in the laying flocks this year, coupled with a level of feed prices which promises to be about the same as that of last year, points to an increase in production of eggs somewhat in proportion to the increase of about 5 per cent in number of birds in laying flocks. The high proportion of pullets and young hens in the laying flocks this year will tend toward higher egg production. Production will be dependent in part upon the extent to which producers practice heavier or lighter feeding as influenced by the price received for eggs during the next few months.

Demand for eggs for storage was not as keen in 1929 as in 1928, largely because of losses taken on storage stocks the preceding fall, and the higher spring price in 1929, which was maintained by slightly smaller supplies and a stronger consumer demand. As a consequence, the 1929 storage season was unusually profitable to the storage operators. With larger supplies of eggs in prospect and with the spring egg price level probably below that of 1929, it is likely that more eggs will be stored this year.

POULTRY

A relatively higher level of prices for poultry than for eggs has existed for the last 10 years compared with pre-war price levels. This is probably largely because of the relatively greater increase in production of eggs than of poultry since the World War (probably due to an increase of the lightweight breeds) and greater concentration of effort in egg production. With the increase of 10 per cent over the previous year in numbers of chickens raised, the marketings during 1929 were correspondingly heavier. Monthly receipts of dressed poultry at the four principal markets during 1929 were approximately equal to those of the preceding year until August; since then they have

increased markedly. Total receipts at these markets for 1929 exceeded those for the year 1928 by more than 8 per cent.

Receipts of live poultry at New York were much below those of 1928 for the first six months and about 94 per cent of 1928 for the entire year.

Cold-storage stocks of frozen poultry on August 1, 1929, were nearly the same as on the same date of 1928. Holdings have increased much more rapidly thus far during the fall and winter of 1929-30 than during the previous year, with the result that on January 1, 1930, holdings totaled 140,000,000 pounds, a quantity 28 per cent greater than in 1929 and 13 per cent greater than the 5-year average. At present it appears probable that peak holdings will occur about February 1, and will be greater than any total previously recorded.

Farm prices of poultry until September, 1929, were from 1 cent to 3 cents above those of corresponding months in 1928, whereas after September they were slightly below. There are several indications that poultry prices during the first half of 1930 will probably be lower than in either 1929 or 1928 and possibly similar to 1927. Both numbers of poultry on farms and storage stocks are high, as in 1927, while at the opening of each year demand has been weakened by a moderate business recession beginning in the latter part of the previous year.

Demand for chickens during 1930 is expected to be fair, although probably not so good as during the last year or two. Looking further ahead, producers of chickens must face the problem of a probable permanent increase in the proportion of turkeys to other poultry, especially at the holiday season, in view of the improvement in methods of raising turkeys and the increase in the number of progressive commercial turkey growers. Should producers in 1930 increase their hatchings, as they are inclined to do following a year of favorable egg prices, they must face the prospect of further material reductions in price levels. Any increase in production of chickens in 1930 for the country as a whole over the production in 1929, either for eggs or meat, will tend to reduce prices of poultry and eggs below the levels of recent years.

TURKEYS

Although lower prices for turkeys in 1929 will discourage many producers, the rapid adoption of improved methods of production has so greatly reduced losses of young birds and lowered production costs during recent years that total numbers may not decrease in 1930. The important commercial areas are not likely to reduce numbers materially.

The turkey crop of 1929 was estimated at 9 per cent larger than that of the previous year. The increase was rather general over the country. Western States reported a 6 per cent increase over the large crop of 1928 and more than 25 per cent increase over the crop of 1926. Much of the commercial supply of turkeys comes from that area.

Information as to market receipts for the Thanksgiving and Christmas market of 1929 is not available, but demand was active and supplies were well cleaned up. Cold-storage holdings January 1, 1930, were 9,830,000 pounds, or about 6 per cent less than January 1, 1929, and 7.5 per cent less than the 5-year average.

The October to December, 1929, farm price of turkeys was about 3.8 cents below the average for these months in 1928 and about 4.0 cents lower than in 1927. The usual seasonal trend of prices paid to growers is upward from October to December. In 1929, however, the farm price of 27.2 cents in October, which was the same as in 1928, fell slightly in November and in December broke sharply to 23.5 cents per pound, or to 7.0 cents below the price for December, 1928. Wholesale prices at distributing markets, however, although 10 to 13 cents below those of the previous year at Thanksgiving, were at Christmas only 3 to 5 cents below those of Christmas, 1928. Retail prices throughout were considerably lower than in 1928, which was largely responsible for the increase in consumption.

Prices paid producers at Thanksgiving and Christmas in 1929 were much lower than in 1928 and information indicates that a greater number of birds than usual were held over by growers into 1930. These lower prices might be expected to reduce production this year but it is not certain that growers who use modern methods will reduce their production even though they failed to realize as great profit as anticipated prior to the market season. The average farm price paid for turkeys October to December, 1929, was only 5.6 cents a pound above the price of chickens for these months, whereas in 1928 this

spread was 8.1 cents and, in 1927, 10.4 cents. This indicates that turkeys have lost much of their advantage in relative price to producers compared with chickens, during the last two years.

As a result of the lower prices last season, turkey production in 1930 may show some decrease. However, production may hold its own or even continue to expand because of greater specialization and increased efficiency of methods. It is likely that any deliberate decrease will not be drastic, but involuntary reductions are often brought about by unfavorable spring weather. The more general adoption of improved methods should enable growers in the future to produce on the basis of a lower market price and thus allow turkeys to compete with chickens on a more nearly equal price basis. This would permit a greater expansion of the turkey industry than would otherwise be possible.

FEED CROPS AND LIVESTOCK

The present trend of feed crop-livestock ratios indicates that during the next few years the producers of feed crops for sale will be in a less unfavorable situation relative to livestock feeders than they have been in for the past few years. For farmers as a whole, in the feed-crop and livestock-producing area, it appears that a continuation of the tendency for livestock producers to produce on their own farms a greater proportion of the feed crops that they use will result in greater net returns from farm operations, particularly if growers of these crops for sale adjust their output to the reduced market demand.

Production of feed grains in 1929 was on a slightly lower level in relation to livestock numbers than in 1928. Yields of the principal feed grains, corn, oats, barley, and grain sorghum in 1929 were all below average and the combined production of these grains was 3.2 per cent below the 5-year average production of 1924-1928. The combined acreage of these crops was 2.6 per cent less than in 1928, but only 0.8 per cent below the 5-year average. In other words, the reduced output was due more to lower yields than to decreases in acreage. Production of feed grains per animal unit in 1929 was 2.6 per cent greater than the average production of the 8-year period 1920-1927, as compared with 13.6 per cent greater than average for the 1928 production. The acreage of feed grains in 1929 per animal unit was 1.9 acres, a decrease of 2.6 per cent from 1928 but still 8 per cent above the average of the 1.76 acres in 1920-1927.

Hay production in 1929 was 7.9 per cent greater than in 1928 and 2.2 per cent above the average (1920-1927). The acreage of all hay, both tame and wild, was 5.4 per cent greater than in 1928 and 0.7 per cent above average. The increased production of hay therefore is attributable partly to yield and partly to acreage. The production per hay-consuming animal unit has shown an upward trend for a number of years and in 1929 was 15.7 per cent greater than for the 8-year period, 1920-1927. The acreage in 1929 of hay per animal unit was 1.04 acres, 4 per cent greater than in 1928 and 8.3 per cent above the average of 0.96 acre for the 8-year period.

The present level of prices of feed grains is about 116 per cent of the level in pre-war years. The present farm prices of hay are 93 per cent of the pre-war prices. The present level for meat animals is 143 per cent; of farm dairy products, 140 per cent. As a result of the decreased supplies of feed crops in 1929 and the increased numbers of livestock, the price level of feed crops is somewhat above that of a year ago. The low feed crop-livestock ratios, accompanied by declining market receipts of feed crops, indicate that feeders of livestock are producing an increasing proportion of the feed they use, while growers of feed crops for sale have failed to adjust their output to a reduced market demand. The favorable ratios of meat and dairy prices to feed-crop prices during the last few years appear to have run their course. The number of work animals will probably continue to decline, and the number of sheep will probably work gradually downward, but these decreases will probably be more than offset by the upturn in cattle numbers now under way, which will probably be accentuated by a cyclical increase in hog numbers within three years. With the combined numbers of animals on farms gradually increasing for several years to come, and a nearly stabilized acreage of feed grains, it would appear that the level of prices of animal products will tend to fall toward the level of prices of feed crops. This tendency will probably result more from lower livestock prices than from an advance in feed-crop prices. Such a trend will work to the relative advantage of growers of feed grain for sale, but to the relative disadvantage of those who buy grains to feed. Greater

net returns to livestock producers would result if the present tendency toward an upward swing in livestock numbers is checked, especially if accompanied by a slight reduction in feed-crop production.

HAY

The outlook for both farm and market hay suggests the advisability of a further increase in the acreage of legume hays and decrease in the acreage of timothy, prairie, and other grass hays. In recent years the trend of hay prices has been in favor of legume hays as compared with timothy, prairie, and other grass hays. A continuation of this trend may be expected this year because the decreasing numbers of horses and mules will further restrict the demand for timothy whereas the increasing numbers of cattle and sheep will probably increase the demand for legume hays.

The 1929 hay crop of 115,000,000 tons was 7 per cent larger than the 5-year average and appears sufficient to provide for the usual domestic disappearance and leave a moderate carry-over. The low price level of dairy products will tend to stimulate farm consumption of hay. The marketable surplus of the better-quality hays for the remainder of the season will probably be less than last year, but with market inquiry likely to be less active than last fall, prices in general will probably average under those of a year ago. Alfalfa hay prices, however, are expected to average higher than in any other recent year except 1928-29. Timothy and prairie hay prices will continue at relatively low levels largely as the result of a decreasing market demand for these hays.

Timothy acreage has continued its downward tendency with the further motorization of industry and agriculture, and the substitution of legume hay for grass hay. Present timothy acreage is only one-half that of 12 years ago but it is still in excess of farm and market requirements. Acreage and production of alfalfa, clover, and other legumes have increased relatively, in the aggregate, more in recent years than all other hays. Clover production last year was greater than in 1928 because of larger acreage and better weather conditions. Alfalfa acreage continues to increase in the northern dairy belt from New York to Minnesota. Alfalfa acreage in this section has increased from 696,000 acres in 1920 to 2,451,000 acres in 1929. On the other hand, alfalfa acreage in Kansas, Oklahoma, and Nebraska has declined from 2,819,000 acres in 1920 to 2,044,000 acres in 1929, a decrease of 28 per cent. Kansas, in particular, showed a marked decline in 1929. No immediate recovery of the productive acreage in those three States is likely because of the difficulty in the control and eradication of bacterial wilt and because of other factors affecting the crop's growth. This decrease in acreage has curtailed production and surpluses of alfalfa hay in these States for marketing in the Southern States.

Distribution of the crop is sharply different from last year. Supplies in the heavy producing West North Central States were 3 per cent smaller than last year. The East North Central States had the largest supplies on record. Most of this increase was in clover and timothy-clover mixtures, and shipments to and the consumption of these hays in Eastern States as substitutes for alfalfa are favored by January prices. Pacific Coast and Rocky Mountain States hay supplies were the smallest since 1924. Supplies of feed grains, cottonseed cake, cottonseed meal, and cottonseed hulls in the Southwest are shorter than last year which will tend to add strength to the winter and spring hay market in that area. The Atlantic Coast States had slightly smaller supplies, but the South Central States had slightly larger supplies than last year. The shortage of annual legumes in some of the Southeastern States will be principally offset by the larger outturn of cottonseed by-products and corn. The Atlantic Coast States can hardly look to the Pacific Coast States for large supplies of dairy alfalfa this winter, but if the season is near average or over, in length and severity, a good eastern demand will probably develop for Arizona new-crop alfalfa which, if not sufficient to meet requirements will be followed by shipments of early cuttings from the Pacific coast.

Producers near the larger consuming and distributing markets will generally find it profitable to grow legume hays as a cash crop. Advantage should be taken of the favorable freight rates in certain sections to grow good-quality hay to meet the increasing inquiry, especially for leguminous hays. Production of alfalfa and other legume hay in the East North Central States and North Atlantic States is much less than their potential requirements. It is improbable that the latter States will be able to supply their requirements in the near

future, which indicates the advisability of increased acreage in the East North Central States.

Additional increases in the far Southwest beyond those already contemplated appear undesirable. A large part of the recently established noncotton zone near Phoenix which was in cotton in 1929 will be planted to alfalfa. There are indications of larger plantings in other districts of Arizona and in New Mexico and west Texas.

Timothy hay crops have been in excess of farm and market requirements for several years and a further decrease in acreage is suggested. Clover and mixtures of clover and timothy may be profitably substituted for pure timothy. The less productive timothy hay acreage in the East North Central and North Atlantic States should be converted into permanent pastures or planted to forest trees. Where livestock are available a further reduction in prairie-hay acreage in the North Central and South Central States, by utilizing it for pasture, will tend to result in a more profitable price level for prairie hay.

The hay situation is becoming one based as much on kind and quality as on total quantity. Production and marketing of unsound hay can largely be prevented by study and application of proper farm methods.

BROOMCORN

A moderate expansion of broomcorn acreage in established producing districts appears justified in 1930 in view of prospective commercial requirements and an indicated small carry-over from the 1929 crop. Allowing for domestic and export requirements equal to the average of the last five years, a crop of about 50,000 tons could be utilized. To produce such a crop with average yields would require an increase of about 5 per cent in acreage over that harvested in 1929. A crop of this size would be comparable with that of 1928, but probably would not bring as high prices as those obtained from last season's relatively short crop.

Stocks of broomcorn remaining for market December 1, 1929, were relatively small and suggested a carry-over at the close of the season, June 1, 1930, of not over 18,000 tons, including factory stocks. Domestic requirements in recent years have averaged a little over 45,000 tons and exports about 5,000 tons, making a total utilization of approximately 50,000 tons. Allowing for a carry-over June 1, 1931, about the same as is in prospect for the 1930 season, a crop of around 50,000 tons would appear adequate to supply probable trade demand. This would be about 7,000 tons over the 1929 crop, but 4,000 tons less than the 1928 production.

Although yields vary materially from year to year, the average for the last five years was 338 pounds per acre. Allowing for an average yield in 1930, it would require about 296,000 acres to produce 50,000 tons. This would represent an increase of about 5 per cent over the acreage harvested in 1929, and growers will find it to their interest not to exceed this figure.

Growers outside the established broomcorn districts should make certain of a market before undertaking to produce broomcorn, since buyers usually visit only important producing districts. Broomcorn production requires special equipment, an adequate supply of labor, and experienced handling. Unless a grower has had experience in growing and handling a crop, he is likely to produce brush of low quality which will not bring profitable returns.

FEEDSTUFFS

Feedstuff prices are expected to continue lower during the remainder of this winter season than they were last fall. Although the combined supplies of feed grains, feedstuffs, and hay are somewhat smaller than those available a year ago, the length of the feeding period this season and the severity of the weather may alter this outlook, but any material increase in consumption of feedstuffs at January prices is unlikely because of the unfavorable market for dairy products. Condition of pastures and feed-grain crops will determine, to a considerable degree, the amount of the seasonal decline in feedstuff prices during the spring months and the level of prices during the summer months.

The total supply of the principal feed grains, corn, oats, barley, and grain sorghums at the beginning of their respective crop seasons in 1929 was about 8 per cent smaller than at the corresponding dates last year. Hay supplies are only slightly larger than a year ago. Little change is anticipated in the

total supply of by-product feeds. Numbers of animals to be fed in 1930 appear about equal to those in 1929. The supply of corn, including the crop and farm and market stocks at the beginning of the season, was about 6 per cent smaller than a year ago. Less oats and barley were available this season than last, and the grain-sorghum crop was reduced by about 30 per cent, but this is being offset somewhat by reduced exports.

Supplies of by-product feeds this season will probably not be much different from those of a year ago. Production of wheat mill feeds varies slightly from year to year with changes in flour production and the quality of wheat ground. So far this season the outturn of wheat feeds has been slightly greater than in the corresponding period last year, whereas flour production has been about equal to the same months of the last two years. The difference may be accounted for in the heavier yield of offal per barrel of flour compared with last season. Prices of bran and heavier offal advanced early this fall as the result of the smaller crops of feed grains and poor fall pasture, but have declined since, with a general slackening in market demand, reflecting the unsettled wheat, flour, and butter markets. During the remainder of the winter season, prices are likely to hold to about their present levels.

The supply of linseed meal available this season will be smaller than a year ago as domestic flaxseed supplies were less than last year. Imports of flaxseed are expected to be large, but meal from the crushing of this seed is usually exported. Last season domestic consumption of linseed meal totaled about 400,000 tons, the smallest since 1923-24, and with the prospective small supplies this season, a domestic consumption even smaller than last year may be expected. The relationship between the price of linseed meal and the principal dairy products is unfavorable to heavy feeding of linseed meal, and the average price for the season may not be much different from last season despite the shorter supply. Prices of linseed meal since the beginning of the season have averaged slightly under the very high prices for the same period last year, but at mid-January were \$5 to \$8 per ton above the average from 1926-1928.

The production of cottonseed in 1929 was 3 per cent larger than in 1928. Considering the carry-over of old-crop cottonseed meal, together with the meal equivalent of the carry-over of cottonseed and the 3 per cent increase in production of the cottonseed, prospective supply of meal for this season is 135,000 to 140,000 tons greater than that available last year. This larger supply has been reflected in prices somewhat lower than a year ago. More cottonseed meal than usual will be used in mixed feeds in view of the shortage of linseed meal. The short cottonseed supply in the Southwest, together with the shortage of feed grains will probably advance prices of cottonseed meal in that section relatively more than in the Southeast where both the supply of feed grains and cottonseed meal is larger than a year ago. Export demand has been dull and will probably continue so because of the larger feed supplies in Europe. Prices during the remainder of this season will probably continue under those of the last two years, and will average lower than from the beginning of this season through December.

Wet-process corn grindings, of which gluten feed and meal are by-products, have increased rapidly in recent years. Corn grindings in the 1928-29 season were slightly over 88,000,000 bushels compared with 87,000,000 bushels in the previous season but the grindings during November and December were lighter than in the same months of recent years. From present indications, production during the remainder of the season will be about as large as in the same months of 1929, and prices are likely to continue under those for 1929.

Hominy-feed prices are lower than in recent years. No data are available concerning production and although the corn crop is smaller than a year ago and of poorer quality, hominy-feed production may not be much different than last year. Prices are not expected to advance to as high a peak as in 1928-29 season, and during the summer months prices will probably follow rather closely the price trend of corn.

Alfalfa-meal production for the season is expected to be below that of last year. Grindings from the beginning of the season through December are about 195,000 tons as compared with 214,000 tons during the same period last year. Demand for mixed feeds has been so light that the seasonal trend to date has followed rather closely the prices of 1928-29. Prices have not advanced as much as last winter and will probably decline from the January and February price level.

POTATOES

Preliminary reports on acreage which growers intend to plant in 1930 indicate a total potato area of 3,570,000 acres. This is nearly 6 per cent larger than the area harvested in 1929. If the intended acreage for 1930 is planted and a yield in line with the trend in recent years is secured, the total production in the United States will be around 421,000,000 bushels, which is about the quantity produced in 1924 when the December 1 farm price was unprofitably low at 62.5 cents per bushel, compared with 131.4 cents per bushel on December 1, 1929.

Reports received from potato growers seem to indicate that in nearly all States a larger acreage will be planted in 1930 than in 1929. In practically all of the late-potato States except Maine and Idaho, a majority of the commercial growers who reported harvesting large acreages of potatoes in 1929 intend to plant reduced acreages this season, the most extensive commercial growers planning the sharpest reductions. On the other hand, a relatively large proportion of the growers in these States who reported they had harvested 10 acres or less are planning increases; the largest percentage of increase is planned by growers with less than 5 acres. In all of the early-potato sections north to Virginia, Missouri, and Kansas substantial increases are being planned by all classes of growers. It is impossible at this time to determine accurately the total acreage which all growers intend to plant, but, considering the large proportion of the potato crop grown in fields of less than 10 acres, the acreage planned in the United States as a whole is believed to average about 6 per cent larger than that planted last year. With loss of potato acreage no greater than in 1929 this would indicate about 3,570,000 acres for harvest in 1930. This acreage would include about 2,296,000 acres in the so-called surplus late-potato States, an increase of nearly 5 per cent over the acreage harvested last year; 848,000 acres in the 16 States growing late potatoes in quantities insufficient for their local needs, an increase of nearly 4 per cent over the acreage harvested last year; and 426,000 acres of early and late potatoes in the 13 Southern States, an increase of nearly 18 per cent over the acreage harvested last year. Before potatoes are planted in the Northern States the intentions of potato growers on March 1 will be ascertained.

If allowance is made for variations in growing conditions from year to year the yield of potatoes continues to show an upward trend, the low yield of 1929 being due chiefly to widespread summer drought. With average growing conditions in 1930 a yield of 118 bushels per acre can be expected. During the last 15 years the acreage of potatoes has shown a downward trend. However, the increase in yields has more than offset the decreased acreage so that total production has increased and prices have shown a downward trend. The 1925 total acreage was smaller than in any of the preceding 10 years and the average farm price was higher than at any time during that period. From 1925 to 1928 acreage was increased each year, yield and production were increased, and prices were lower each year until the low level of 1928 was reached.

Stocks of old potatoes on hand have an important bearing on the outlook for early potatoes in 1930 as well as on the future marketings from the 1929 crop. Stocks of merchantable potatoes on hand January 1, 1930, in the 35 late-potato States were probably about three-fifths of the quantity on hand January 1, 1929, and were probably the lowest since January 1, 1926. As the relatively light holdings on January 1, 1930, will probably find outlets at good prices, early-potato marketings from the South will meet less competition than in 1929.

November reports from commercial potato growers in 12 important early and second-early States, including those as far north as Oklahoma and Maryland, indicated that an increase of about 12 per cent in the commercial early-potato area was intended, which represents an increase of slightly over 1 per cent in the total potato area. Earlier in the season this increase appeared to be reasonable in view of the prospective smaller stocks of old potatoes on hand, higher price level for potatoes, and probability of lower yield in this area in 1930 than in the previous three seasons, during which years weather conditions were unusually favorable and yields were above average. Recent reports show further increases over these intentions. At present, the reduced buying power of consumers (compared with the high level of 1929) appears to have prevented the expected seasonal price advance, so that something less than the intended acreage might be desirable in the Southern States.

Growers who market their crop in late July, August, and early September should take into consideration the fact that States whose crops mature earlier than theirs are planting increased acreages and that there is a possibility of overlapping shipments and increased competition from these States and also from early marketings from the late States. Potatoes in these States must be moved to market promptly in a limited number of weeks; therefore growers should be particularly careful to refrain from any large increase in acreage.

In the surplus late-potato States reports of intentions to plant indicate nearly 5 per cent increase over the acreage of 1929, but growers in these States should consider the advisability of holding acreage very close to that of 1929 for the following reasons:

(1) In view of last year's low yield and the possibility of a higher yield in 1930, the planting of an acreage equal to that in 1929 would, with a yield in line with the trend in recent years, result in a larger crop, which would reduce prices considerably below present levels.

(2) The early fall crop of the Northern States is likely to meet increased competition because of the increased acreage in the early States.

(3) It is not at all certain that buying power of consumers and the general commodity price level in the fall of 1930 will be sufficiently greater than at present to warrant an increased acreage, and

(4) Growers have usually avoided financial losses and disappointment in prices whenever they refrained from acreage expansion under conditions like those now existing.

SWEETPOTATOES

In the sections that raise sweetpotatoes for commercial shipment production was heavier in 1929 than in 1928, but prices to date have averaged slightly higher. Apparently the unusually small United States crop of potatoes and the reduced supply of some other vegetables helped the marketing situation for sweetpotatoes. Some increase in the commercial acreage of sweetpotatoes is to be expected in 1930, but the shift towards potatoes in parts of the Eastern Shore section of Virginia will tend to prevent the increase in sweetpotatoes from being as large as might otherwise be expected.

In those portions of the Cotton Belt in which sweetpotatoes are grown primarily for local consumption the acreage varies from year to year according to the price of cotton, a low price for cotton resulting in an increased acreage of sweetpotatoes the following season. In the South, as a whole, some small increase in the acreage of sweetpotatoes for local consumption is to be expected this year, but no serious overplanting is anticipated, except possibly in some sections west of the Mississippi River where drought in 1929 reduced the production of both cotton and sweetpotatoes and resulted in locally high prices for sweetpotatoes and other food crops.

DRY BEANS

No radical change in the acreage planted to beans in 1930 seems advisable. Shortages of some classes, notably pea beans, are due to low yields in 1929; the heavy production of other classes, for example pintos, is the result of abnormally high yields per acre. With few exceptions the acreage devoted to the respective classes, provided average yields are obtained, seems to be well adjusted to domestic demand. The total United States production of 19,337,000 bushels of beans in 1929 is closely in line with present domestic requirements except for the relatively low production of pea beans and a heavy excess of pintos. Prices for most classes are considerably lower than those realized for the short crops of 1927 and 1928, but are still about the average for the five years 1923-1927.

Average production of all beans during the five years 1924-1928 was 17,327,000 bushels. Supplemented by net imports beginning July 1 of the crop year, the average annual supply for domestic consumption during this 5-year period was about 18,000,000 bushels. Consumption of beans, however, tends to increase at the rate of about 500,000 bushels annually. At the beginning of the movement of the 1928 and 1929 crops, stocks were practically exhausted. During the period July 1, 1928, to July 30, 1929, a net total of about 18,550,000 bushels moved into consumptive channels. Although prices during this period were abnormally high because of the short supply, the imports were a little less than average, owing to the small crop of 1928 in other countries.

In 1929, to the contrary, the bean crop was large in Rumania, Japan, and other important producing countries. Unusually heavy imports of 943,000 bushels during the first four months (September–December) of the 1929–30 marketing season, were encouraged by the high United States price level of beans at that time, depleted stocks generally, low production of pea beans in this country, and, probably, anticipation of upward revision in the tariff on beans. These imports depressed prices, especially those of pea beans.

The harvested acreage in Michigan and New York, composed largely of pea beans, was 28 per cent greater in 1929 than in 1928. Because of low average yields, however, the production of pea beans was only 5,500,000 bushels, or slightly more than in 1928, and 800,000 bushels below the average for the preceding five years. But the proportion of merchantable beans was higher in 1929 than usual. An average yield on an acreage equal to that harvested in 1929 would result in a total production of over 7,000,000 bushels. Therefore, no increase in the acreage of pea beans seems warranted, and some reduction may be advisable to guard against an undue surplus and attending lower prices. A protection of around 6,500,000 bushels prepared for market so as to maintain the high standard of quality desired by discriminating purchasers would assist in holding for pea beans their favorable place in the domestic market.

Farm prices of pea beans rose abruptly during the first part of 1928, advancing by April to over \$8 per 100 pounds to growers. This high level was maintained almost continuously until in September, 1929. With heavy imports of similar types from continental Europe, Japan, and Canada, and increased production of competitive types in this country prices to growers had declined to \$6.50 per 100 pounds by December 15, 1929, which still is higher than at any time during the years 1923–1927, inclusive.

The 1929 production of 2,376,000 bushels of great northern, which is 16 per cent larger than that of 1928 and 6 per cent larger than the previous high record of 1927, should be ample to meet the growing demand for this class. The acreage devoted to great northern was increased about 12 per cent in 1929. The average yield per acre was 18.5 bushels, which is about 2 bushels more than in 1928, and about one-half bushel above the 5-year period 1924–1928. With yields equal to the 5-year average a material increase in the acreage devoted to this class in 1930 would probably depress prices still further.

Total production of red kidney beans in 1929 was about 300,000 bushels less than in 1928 and 350,000 less than the 5-year average, 1923–1927. This low production was due principally to low yields, with an especially short crop of dark red kidneys as evidenced by the prevailing high price of this class which is commanding a premium of \$2 per 100 pounds over light red kidneys. With average yields in 1930 on an acreage equal to that of 1929, production is likely to be sufficient for demand.

The acreage of pintos harvested in 1929 was slightly less than in 1928. A smaller-than-average abandonment of planted acreage, together with unusually heavy yields resulted in a total production of 3,527,000 bushels compared with 2,250,000 bushels in 1928, and an average of 2,100,000 bushels during the previous five years. This indicates the existence of a surplus of pintos. An average yield in 1930 on an acreage equal to that harvested in 1929 would produce about 3,000,000 bushels which, with a prospective carry-over, would still be above present demands for this class.

The production of Lima and baby Lima beans, grown almost wholly in California, on an increased acreage was about the same as in 1928 because of lower yields. Relatively high price levels for these classes are being maintained. An average yield on an acreage equal to that harvested in 1929 would produce 2,570,000 bushels, compared with 2,300,000 bushels in 1929.

Although the production of California pinks in 1929 was lower than in any year since 1924, prices declined the last of 1929 about 50 cents per 100 pounds largely because of the excessive supply of pintos with which they compete. The effect of this competition may be felt during the marketing of the 1930 crop.

CABBAGE

With relatively light holdings of old cabbage and reduced acreage in southern areas, the present prospect is for favorable markets. The situation next fall and winter will depend largely upon plantings in the late-shipping States. If acreage is slightly reduced in the late States and average yields are obtained, the present encouraging market situation may continue.

The 1929 production of cabbage in early States (Florida, Louisiana, Texas, and California) was the highest on record, chiefly because of large plantings in southern Texas. This larger early acreage followed the light production and small holdings of 1928 northern cabbage. Relative scarcity of old stock helped southern growers to obtain an unusually favorable price, considering the size of the crop. A reduction of about one-fifth in the early acreage was indicated by reports from growers for the present season and freeze damage has caused additional losses in the first plantings, leaving a smaller area of early cabbage than in any year since 1926. The intended reduction resulted from the lower market price, associated with the heavier crop of late or northern cabbage last fall. The storage stocks this winter are relatively small. In view of the limited holdings North and West and the smaller acreage in the South, growers now shipping early cabbage are expected to have a fairly favorable season. Opening prices in the lower Rio Grande Valley of Texas were encouraging.

The second-early group (Georgia, North Carolina, South Carolina, the Norfolk section and Eastern Shore of Virginia, Alabama, Mississippi, and the spring area of Louisiana) ships largely from April until June. These States together had a very large crop in 1929, exceeding all previous records. Overlapping of the early crop helped to make a congestion of shipments in the spring, so that the average farm price per ton dropped to a lower level than ever before. Remembering the 45 per cent decline in the farm price last year, growers in the second-early States are planning a 10 per cent reduction in their 1930 acreage, which, with average yields, may improve prices only slightly, unless acreage losses from recent freeze damage are not made up in replantings.

Marketing conditions for cabbage are usually most difficult during the summer months, when the intermediate-shipping States are active. Plantings in this group (from Maryland, Delaware, New Jersey, and Long Island through southwestern Virginia and the middle tier of States to Iowa, Missouri, and Arkansas, including also New Mexico and Washington) were increased last season to a total of 24,000 acres—the highest ever reported. Relatively light yields per acre helped to reduce the production below that of 1928 and increased the average farm price by one-fifth over the 1928 price level. Acreage in these States has shown a gradual upward trend annually since 1924, increases in acreage being relatively larger in years following high prices. It is possible that growers may be planning some further acreage increase in 1930, but it will pay them to remember that low yield was the factor causing the 1929 market situation to be more favorable than that of 1928. Instead of increasing plantings, growers in these States should decrease their acreage by at least 5 per cent or down to the more moderate plantings of years prior to 1929. This reduced acreage, with average yields, would furnish adequate supplies in view of the summer price slump that is usually experienced.

Plantings of late or main-crop cabbage in 1929 were increased 12 per cent over the previous year, but the average yield per acre was the lightest in eight years, which kept production down to a fairly moderate volume. The average farm price for the late States declined 13 per cent, or about \$2.50 per ton, but is still the second highest price since 1921 and about 70 per cent above the average of yearly prices from 1923 to 1927. There was a particularly sharp decrease in the New York price in 1929. More than one-fourth of the late crop is grown for sauerkraut. Demand was active last fall and the quantity used for manufacturing purposes was greater than in any of the last six years except 1927. Returns for "kraut" stock were rather favorable. On the strength of the exceptionally high prices received the past two years, growers in the late States are likely to be considering a material increase in the acreage in 1930. Even if the acreage is held down to the 1929 level and average yields are secured, the resulting crop would be almost as large as that of 1927, which would probably lower the average farm price from 30 to 40 per cent below that of 1929. No increase in acreage seems warranted in the late States, in view of these possibilities and the rather uniform demand for late cabbage as indicated by car-lot movement.

LETTUCE

With the constant tendency toward expansion of lettuce acreage, particularly in California and Arizona, the industry is faced with a real problem in the orderly distribution of the crop, in the prevention of serious overlapping of shipping periods in competing districts, and in the production of high-quality lettuce.

A moderately increased total commercial production of lettuce in 1929 over that in 1928 was marketed at higher average prices. The pronounced increase in the demand for lettuce, which has characterized the past several years, continued in 1929 and there is as yet no evidence that the peak of demand has been reached.

Growers should not, however, assume that markets can be expanded sufficiently to absorb a very large immediate increase in production at the present level of prices. Production in New York in 1929 was 73 per cent larger than in 1928 and as a result prices dropped 58 per cent. Similar conditions were experienced in the Imperial Valley of California in 1926-27 and in the California spring-lettuce area in 1928.

The commercial acreage of lettuce in the United States has increased each year since 1918 with but one exception. Car-lot shipments of lettuce have shown an increase every year since 1918. During this period the area in commercial plantings has grown from 16,090 acres to 141,430 acres; and shipments have increased from 13,788 cars to 53,260 cars. Practically all of these increases have been in the States that produce Iceberg-type lettuce, principally California, Arizona, and Colorado.

Acreage in the early States (Imperial Valley of California, Arizona winter crop, Texas, and Florida) is estimated at 54,500 acres as compared with 46,820 in 1929. Arizona is just completing the marketing of its early-winter crop and the season will probably not prove entirely successful because of poor stands resulting in low yields. The Imperial Valley of California at this season becomes the principal source of lettuce shipments. An early forecast of production in this district indicated that the crop would exceed the largest production previously recorded, which was 5,230,000 crates in 1927.

TOMATOES

In general, the total acreage of tomatoes grown for shipment to market in 1930 should be held close to that of 1929 or decreased. With average yields and medium quality, this policy would probably result in returns, for the country as a whole, averaging somewhat below the high level of 1929 returns which were largely the result of the unusually good quality of late-spring and mid-season production.

Fall plantings in Florida and Texas, although never a large percentage of the entire acreage of the country, assumed greater importance in the fall of 1928. Acreage on the Florida east coast was increased from 400 acres in the fall of 1927 to 4,000 acres in the fall of 1928, and south Texas plantings were increased from 800 to 1,400 acres during the same period. Plantings this last fall were almost as heavy as in the fall of 1928, but losses from storm, frost, and other weather damage reduced the acreage to less than one-half that of the 1928-29 season, and reduced indicated production to little more than half.

In spite of heavy losses to the fall crop in Florida and Texas, there is danger that the spring planting in these two States and in the Imperial Valley of California is being overdone. Early reports from growers indicated that the plantings in Florida may be only slightly less than the acreage last spring and that the acreage in the lower valley of Texas is doubled (from 8,000 acres in 1929 to 16,000 in 1930), which in itself would mean a 20 per cent increase in the entire early acreage of the three States. In 1929, these early States planted an acreage 13 per cent larger than in 1928 but lower yields resulted in a production 10 per cent below that of 1928. Prices averaged almost 20 per cent lower than the year before principally because of the heavy market movement of domestic supplies early in the season in competition with a large volume of imports. So far in the 1929-30 season, imports have been below those of the previous season, with substantial decreases in supplies from the west coast of Mexico and from the Bahamas. These decreases, however, are being offset greatly by increased imports from Cuba. If growers in the early States have carried out the full acreage intentions reported, they face much lower returns than were received in 1929. In addition to the acreage increase, there is a probability that yields will average higher than in 1929, when yields on the Florida east coast were low, and that imports will be only slightly lower this year.

Danger is present, also, in the acreage situation in the second-early States, in that too large an acreage may be planted in 1930, particularly in view of the prospective increase in the spring crop. Acreage in the second-early States

(South Carolina, Georgia, Louisiana, Mississippi, and Texas) shows a pronounced upward trend, having trebled from 1918 to 1928. Acreage in 1929 was reduced 10 per cent below the record acreage of 34,400 acres in 1928 but yields averaged one-fourth heavier. Production was 12 per cent larger, and of exceptional quality, and prices averaged almost 30 per cent higher than in 1928 when unfavorable weather lowered the carrying quality of the crop. These five States, and notably Mississippi and Texas, have expanded acreage to the point where, in years of average yield and good quality, the crop fits comfortably into its market position. Any further acreage increase in 1930 appears extremely inadvisable.

The intermediate shipping States (Arkansas, Tennessee, Missouri, Virginia, Maryland, New Jersey, and one county each in Ohio and Illinois) made a slight decrease in their 1929 commercial shipping acreage after two years' expansion from the low acreage of 1926. Although production in 1929 was about one-fourth greater than the year before, the crop was of better quality than the 1928 crop, which was marketed at the lowest average price since 1922. The 1929 crop sold at a 30 per cent higher price than the 1928. Growers in these States in general should refrain from increasing acreage in 1930 above the general level of the 1928 and 1929 plantings if average returns of recent years are to be maintained. Where acreage plans in any of these States are partially influenced by the probable requirements of canners for tonnage purchased on the open market, shipping growers should consider the possibility of a lighter demand for noncontract tomatoes than in 1929.

Of the late States, California (outside of Imperial Valley) has about one-half the shipping acreage and Indiana about one-seventh. New York, Illinois, and Kentucky together account for one-fourth and the remainder of the acreage is scattered in Colorado, Oregon, Utah, Iowa, Michigan, Ohio, Pennsylvania, and Delaware. These late States, except for a sharp decrease in 1926, have fluctuated between 34,000 and 38,000 acres since 1922. The trend in recent years has been downward. Acreage decreases in some of the Eastern States in 1926 were counterbalanced in 1927 by a large expansion in the California acreage. Production in the last four years has settled at about the level of 4,000,000 bushels. In view of the fact that these States ship their crop when adequate local supplies are available on the markets, there is no inducement for an acreage increase. A continuation of the tendency to make slight yearly reductions in the shipping acreage may be necessary to maintain the average price level of the last two years.

Production of tomatoes for market is closely associated with production for canning and manufacturing purposes in many of the intermediate and late States.

The 1929 production of tomatoes for canning and manufacturing purposes was nearly 50 per cent larger than the extremely short crop of 1928 and was the largest crop since 1925. Following the light pack of canned tomatoes in 1928, the larger pack this past year is not expected to result in an excessive carry-over. Although in recent years, increasing fresh-tomato supplies on the markets have served to retard the upward trend of consumption of canned tomatoes, present canned-tomato stocks are expected to be absorbed without difficulty. Since, in the production of tomatoes for canning, contract prices are a settled factor at the beginning of the season, growers of cannery tomatoes should give further attention to the more variable factors affecting their returns, such as yields and quality. Growers of good-quality tomatoes have had their returns increased materially in some sections of Indiana, New York, Pennsylvania, and other States where canners and growers have adopted a system of buying and selling on the basis of United States grades. Under this system a substantial premium paid to the grower of a good grade of tomatoes provides an incentive for the production of better-quality stock to the mutual advantage of canner and grower.

ONIONS

Onion growers in most States will find it advantageous to reduce their acreage somewhat in 1930 as compared with 1929. This applies in particular to producers of main-crop onions in the Northern States where the acreage has been increasing and prices have been declining. With present storage holdings on high levels the 12 per cent acreage reduction intended in the early States hardly seems sufficient to bring prices to a more favorable level.

The early Bermuda and Creole onion States (California, Louisiana, and Texas), with 25,000 acres, showed little change in 1929 from the high acreage and production of the previous year, with prices about \$1 per bushel for both years. The record 1929 acreage was 61 per cent above the average acreage for the 5-year period 1923-1927. The average price for the last two years was 30 per cent below the average for the same 5-year period.

The mid-season shipping States (California, Iowa, Kentucky, New Jersey, northern Texas, Virginia, and Washington) showed a material decrease in 1929 from the large acreage and production of 1928. Prices increased sharply over 1928 levels but were still considerably below the average of the previous five years. A further decrease in acreage below that of 1929 in these States which are subject to competition from both early and late groups would tend to restore more favorable price levels.

Growers of the late domestic onion crop failed last year to recognize that the small production in 1928 which resulted in high prices was largely due not to the reduced acreage but to the smallest yield per acre since 1921. Plantings in these Northern States in 1929 were about 17 per cent above the 1928 acreage and the average of the previous five years. The large acreage in 1929 was accompanied by a high yield per acre and resulted in a record production. All important States of the late group except Indiana and Massachusetts increased their acreage. The increase in Colorado was outstanding, the acreage being about doubled in 1929, the production more than doubled, and the average price reduced about two-thirds compared with 1928. A reduction of 15 per cent from the 1929 acreage would, with average yields, still give a production equal to the average the last five years. Growers of this group should remember that, although there have been alternate years of increase and decrease in acreage with surprising regularity during the last 10 years, the general trend has been upward. A corresponding downward trend in prices indicates that the acreage increase has been at too rapid a rate.

CITRUS FRUITS

The 1930 outlook indicates, as did those of the four previous years, a considerable increase in the bearing acreages of oranges and grapefruit. Many trees now in bearing have not reached the age of maximum yield and a large increase in production may be expected in years when favorable growing weather prevails. The bearing acreage of lemons has not shown any pronounced change since 1921; a slightly downward trend is now indicated, but production is on a high level and the industry still is confronted with difficult marketing problems.

Of the total shipments of oranges in the United States about 66 per cent move from November to April, inclusive. Practically all of the crop, except the California Valencias, move during this period. Assuming an average of 70 trees per acre, total orange acreage in Florida is estimated at 195,000, of which about 15 per cent is nonbearing. Under more favorable conditions than have prevailed in recent years a material increase in production may be expected. Texas, with an acreage of 18,900, has only about 25 per cent in bearing. As contrasted with the situation in Florida and Texas, California Washington Navel production has probably reached its peak. Only 3 per cent of the 100,500 acres of Washington Navels are classified as nonbearing. A further increase in bearing acreage and production of California Valencias is expected. Of the total acreage of 112,200 acres, 20,900 acres, or 19 per cent, are classified as nonbearing. During recent years there has been a marked upward trend in both production and prices of California Valencias which indicates a substantial increase in the demand for them. This upward trend in demand is expected to continue but at a slower rate.

The importance of an export outlet for California Valencias in years of large crops was demonstrated last year. During the 1928-29 season over 1,500,000 boxes of oranges were shipped to foreign markets, exclusive of Canada. Most of these were Valencias shipped from May through October. Increasing supplies of South African and Brazilian oranges are being placed on European markets during these months and there are indications of greater competition from these sources in the future. Growers of winter oranges can expect an outlet in Europe for only a relatively small quantity of the higher-grade fruit in view of the keen competition from Spain and Palestine.

Florida, with a total grapefruit acreage, estimated at 80,000 acres, has approximately 95 per cent of bearing age. Texas, with approximately 70 per cent of the acreage of Florida, is estimated to have only about 20 per cent of bearing age. The California bearing acreage is reported as 9,000 with a forecast of 11,800 bearing acres for 1932. Porto Rico with an acreage estimated at 3,800, has not fully recovered from the damage resulting from the hurricane of 1928. It is reported that not until another season will Porto Rico be shipping as heavily as before the hurricane.

There are good prospects for a continued expansion in the foreign markets for grapefruit. In 1929 Great Britain took more grapefruit than ever before, but the per capita consumption is still far behind that of the United States or even Canada. Porto Rico is supplying an increasing share of the British grapefruit imports. Continental European countries are showing a greater interest in grapefruit and the outlet there will undoubtedly expand, particularly if efforts are made to acquaint consumers with the merits of this fruit.

Canning of grapefruit offers another marketing outlet. During the last season 957,000 cases were packed as against 453,100 in 1927. In addition, canners put up 202,000 cases of grapefruit juice.

In view of the prospective large increase in production, especially of grapefruit, during the next few years, and the consequent probable depressing effect on prices, only those with the wisdom and skill in production that come from successful experience or adequate training should contemplate new acreages even for replacements. The outlook with respect to the Mediterranean fruit fly in Florida is much more encouraging than was anticipated last spring.

In California, where practically the entire lemon industry of the United States is located, production in some recent years has been so great that difficult marketing conditions have resulted. Bearing acreage has not changed greatly since 1921 although the slightly downward trend which began in 1926 is expected to continue for the next few years. Indications are that production is now near the peak.

APPLES

As indicated in the 1929 outlook report, commercial production of apples for the country as a whole probably will continue to increase gradually for several years. However, the apple industry has recovered largely from the disturbed conditions which accompanied the rapid expansion of plantings in the Northwest and elsewhere, 20 to 25 years ago, and the rate of increase in commercial production is expected to be less than during the years when these plantings affected production most. The extent to which the industry has recovered and the tendency toward more moderate plantings in recent years is encouraging for the efficient commercial grower who produces fruit of high quality. But the large number of relatively young trees now planted indicates an increase in commercial production over a period of years as well as heavy production and low prices when weather and other growing conditions are especially favorable throughout the apple areas. Notwithstanding the low production and the relatively good prices of 1927 and 1929, commercial plantings appear to be justified only where unusually favorable conditions exist for the economical production of good-quality fruit.

Plantings of a few years ago in the East show a decided shift to such varieties as the Delicious, McIntosh, Jonathan, Stayman Winesap, Winesap, and Yellow Transparent. Apples of those six varieties constituted 43 per cent of market supplies in the 1926 season, according to a survey of 41 cities in the United States, and the large numbers of young trees of these varieties indicate increasing production for several years. On the other hand, trees of some varieties, such as Baldwin, Rome Beauty, Rhode Island Greening, Ben Davis, and York Imperial, as a whole, have been only moderately planted in recent years and little, if any, increase in production is expected from this group. These five varieties made up only 26.8 per cent of the 1926 market supplies in the 41 cities. Recent plantings, as well as market supplies of many of the minor varieties, have been light.

According to an apple-tree survey made in 33 States, which produce over 90 per cent of the United States' apple crop, from 25 to 30 per cent of the trees in the commercial orchards reported were less than 9 years old at the beginning of 1928, and 65 to 70 per cent were under 19 years old at that time. As the older orchards, as a class, have fewer trees per acre, the proportion of the

acreage in young trees is somewhat less than the proportion of young trees. However, with general tendencies toward an increasing bearing life and an increasing productive capacity per tree, owing to better orchard management and to the greater proportion of orchards on the better locations, it seems reasonable to expect a continued upward trend in commercial production for several years. This tendency toward increasing commercial production probably will continue to be partially offset by declining production in family orchards, since the rate of plantings in such orchards has decreased in recent years and since the family orchards generally receive little attention. But the apples produced by the millions of trees in these small orchards will continue to have considerable influence on apple prices, especially in seasons when growing conditions are good throughout the apple country.

In the barreled-apple States recent commercial plantings have been fairly heavy and at the beginning of 1928 about two-thirds of the trees reported in the survey of commercial orchards were less than 19 years old and nearly one-third were under 9 years. The pronounced movement toward better management of commercial orchards easily may become a factor of increasing significance, and contribute materially to the bearing capacity of the commercial orchards in the barreled-apple States.

Evidence each year becomes more convincing that production in the Northwest is near its peak. Yearly production in the boxed-apple States during the last four years was 80 per cent higher than the average of 10 to 15 years ago, but only 4.5 per cent greater than the average of 4 to 8 years ago. At the beginning of 1928, only 13 per cent of the trees reported in the survey of commercial orchards of the four principal western apple States—Washington, Oregon, Idaho, and California—were under 9 years of age. Recent plantings have been light and removals in the less favorable sections have continued. About 70 per cent of the trees in the commercial orchards of these four States are less than 20 years old, but in the West as a whole, no material increase in production is in sight. The boxed-apple States contributed a large part of the increase in commercial apple production of the United States. Production in these States increased from about 19,000,000 bushels per year during the period 1909–1913, to about 55,000,000 bushels annually during the years 1925–1929.

As indicated in the 1929 outlook report, the Delicious, the McIntosh, the Stayman Winesap, and the Yellow Transparent have been planted extensively during recent years. Trees of these four varieties constituted one-fifth of the commercial apple trees reported in the tree survey of the important apple-producing States. About half of these trees were planted during the 8 years just preceding 1928, and from 85 to 95 per cent were planted during the 18 years preceding 1928. Winesap, Jonathan, and Rome Beauty represented another fifth of the trees in commercial orchards. About one-quarter of these trees reported were under 9 years of age, and 75 to 80 per cent were under 19 years old at the beginning of 1928. Production of these seven varieties is expected to increase during the next several years.

Among the older winter varieties, Ben Davis is declining. Less than 7 per cent of the trees reported of this variety throughout the important apple States were planted during the period 1920–1927. Only light plantings of the York Imperial have been made during this time. Baldwin, Northern Spy, and Rhode Island Greening have been planted only moderately during recent years. Many less important varieties are giving way to the more popular.

Exports of apples from the United States during the last five seasons have averaged 15 per cent of the commercial crop. In the 1928–29 season exports amounted to 16 per cent of the commercial barreled-apple crop and 24 per cent of the commercial boxed-apple crop. Prices received for American barreled apples in foreign markets have been little, if any, higher than in the 1928–29 season and total exports have declined considerably this season compared with 1928–29. This has been particularly apparent in the British market. The uneven quality of American barreled apples sent to British markets and the much increased competition from Canadian barreled apples have been primarily responsible for this situation.

It is becoming clear that eastern shippers and growers of barreled apples must expect increasing difficulties in disposing of low-grade fruit in European markets at profitable prices. These markets already have large supplies of such fruit from European orchards. Outlets in European continental markets have been reduced this year by competition from larger European apple crops but the demand for high-grade American apples has held up fairly well.

Over a long time period it seems probable that the outlet for such apples in the continental markets will continue to expand.

The outlook for the remainder of the present export season is not particularly bright. Exports this season through December were about 6,899,000 bushels, which is 38 per cent less than the heavy exports during the corresponding period last season. Supplies of Spanish oranges on European markets are very large this year and prices are low. Furthermore, present prospects point to a considerable increase over last year in Australian and New Zealand apple exports to Europe beginning in March. This will tend to restrict the outlet for cold-storage apples from the United States during the latter part of the season.

In some respects, the outlook for the remainder of the present marketing season is rather favorable, but owing to lowered consumer purchasing power, there is not likely to be the seasonal advance in prices for the remainder of the 1929 crop which was expected at the beginning of the season. The 1929 commercial apple crop was 18 per cent below that of 1928 and 10 per cent below the average of the previous five years. Cold-storage holdings on January 1, 1930, were 12 per cent less than on January 1, 1929, and $1\frac{1}{2}$ per cent less than the January 1, 5-year average of 1925-1929. The smaller crops of citrus fruits and pears will offer less competition than last season on domestic markets.

PEACHES

Notwithstanding the small crops of peaches in most of the leading areas in 1929, due chiefly to adverse seasonal conditions, the number of trees of bearing age is still so great as to make possible heavy production and unfavorable marketing situations during the next few seasons. In the South the peak of production from trees now in orchards has probably been reached, and the trend is expected to be downward. In California the indicated trend in production of clingstone varieties is upward, whereas the production trend of freestone varieties is expected to continue to decline. In most other peach-growing areas only moderate changes in production are in prospect.

In the South under favorable seasonal conditions and with reasonable cultural attention, heavy production may still occur during the next few seasons. Carload shipments in the Southern States during the last four years have averaged 34 per cent more than for the preceding 4-year period. Five States—Georgia, North Carolina, South Carolina, Tennessee, and Arkansas—accounted for 96 per cent of the southern shipments in the last four years. During the spring of 1929, a survey of approximately 2,900 commercial orchards of 100 or more trees each, in these five States, indicated that 27 per cent of the trees were less than 6 years of age, 56 per cent were from 6 to 9 years of age, and 17 per cent were 10 years of age or over. The survey of commercial orchards in these same States, four years earlier, showed a distribution of 67, 24, and 9 per cent in the respective age groups. These figures indicate that recent plantings in these States have been relatively light and that nearly 60 per cent of the trees are near the age of maximum yield which, in the South, is probably about 8 or 9 years. Many trees have been removed or weakened by neglect and disease. A downward trend in production in the South is therefore expected.

The proportion of young trees is now much lower than in 1925 in four of the five States. In Georgia, trees less than 6 years old constituted 23 per cent of all trees in the commercial orchards reporting in that State in the 1929 survey, compared with 59 per cent in the 1925 survey. For the four other States corresponding percentages were: North Carolina, 20 per cent in 1929 compared with 79 per cent in 1925; South Carolina, 35 per cent compared with 89 per cent; Tennessee, 24 per cent compared with 81 per cent; and Arkansas, 69 per cent in both surveys. The large percentage now under 6 years of age in Arkansas is due chiefly to very heavy plantings in some sections of that State in about 1924.

In some districts in the South as well as in other areas many growers are confronted with serious problems of production, due to such causes as difficulties in financing, disease of trees, and insect damage. Many of the orchards suffering from neglect could be restored to a satisfactory condition if the economic situation of the growers in these districts should improve. The oriental peach moth is a menace in the eastern, mid-western, and some southern peach areas. These factors add an element of uncertainty to the outlook.

The work of eradicating trees affected with phony peach disease has been about completed in northern and central Georgia where few affected trees were found and is progressing in the southern part of the belt where the disease is more prevalent. The outlook is encouraging for controlling damage from this cause by removing practically all affected trees in the southern Georgia district within a year or two. The removal of diseased trees will probably not decrease production in proportion to the number of trees removed, as many of the diseased trees have been producing only small quantities of inferior peaches.

In Georgia the reports of commercial orchards represented in the 1929 survey showed a total of 3,360,000 trees removed from 1926 to the spring of 1929, and an additional 340,000 trees standing abandoned in the orchards but not included in the count of orchard trees. The survey in Georgia is believed to have covered at least 95 per cent of the commercial trees. These abandoned and removed trees amount to 30 per cent of the total number of trees estimated to have been in these commercial orchards at the close of 1925. More than four-fifths of the abandonment and removal of trees took place in the southern Georgia district, where the 3,000,000 trees reported as removed or abandoned during the period represent almost 45 per cent of the trees in the orchards at the close of 1925. Plantings from 1925 to 1929 have served to replace one-third of the trees removed or abandoned in Georgia, the reports indicating the replacement ratio for the northern district to be one-third, for the central district three-fourths, and for the southern district one-fourth.

The southern Georgia district, where removals and abandonment have been heaviest, normally has but little competition in the markets until the latter part of its shipping season. The considerable plantings that are being made in this district, particularly of the Hiley variety in general, seem justified.

Plantings in the southern and central districts in the last five years have included considerable numbers of early varieties. The Early Rose Uneeda, Early Wheeler, and Mayflower varieties represented 8 per cent of the total number of trees reported in the 1925 survey in Georgia, whereas the 1929 survey indicates that they now represent almost 14 per cent of the Georgia trees. Although these early varieties have usually brought good prices at the beginning of the season, experience has demonstrated that there is a generally limited demand for them.

To summarize conditions in the five leading Southern States, commercial plantings in recent years have not been sufficient to maintain the present number of bearing trees, since for the five States the trees under 6 years comprise only 27 per cent of the total. Some reduction in potential bearing capacity for the region is desirable as recent heavy crops have resulted in low prices. For the region as a whole, the average rate of plantings of the last six years could be increased at least 50 per cent in the next few years and the production level five to eight years from now would still be below that of recent heavy crop years. This is assuming a life of 13 to 15 years for southern peach trees. New plantings, however, should be made only on favorable sites and by growers who are prepared to give them proper cultural attention.

In the principal Middle Western States (Illinois, Indiana, Ohio, Michigan, and Missouri) carload shipments of the last four years have been 70 per cent greater than for the preceding 4-year period. Fifty-two per cent of the production in this group in 1929 was in Illinois. In the southern part of Illinois where weather hazards are not so great as farther north in the State's peach belt some increases in production during the next few years are likely to occur. The East, the Rocky Mountain States, and the Pacific Northwest, when considered by regions, have shown only moderate changes in commercial production during the last four years as compared with the previous four. In western New York peach acreage is decreasing considerably.

Moderate planting in favorable locations in the East, Middle West, Rocky Mountain States, and Pacific Northwest, to about maintain the present bearing acreage, seems advisable. Because of local conditions of production and marketing some shifts in producing districts and varieties within these regions are occurring.

In California, as a result of a severe freeze, the 1929 crop was only a little more than half the size of the large 1928 crop. Under normal weather conditions, however, very heavy production of clingstone peaches is anticipated for the next few years. The peak of clingstone production is not likely to be reached until 1931 or 1932 at which time it is probable that the trend of

production will be about 15 per cent higher than in 1928. As contrasted with the prospective increase in clingstone production, it is expected that the production of freestone peaches will continue to decline. Of the 67,400 acres of freestones in California in 1929, 90 per cent were in bearing, and 71 per cent of the bearing acreage was 11 years of age and over. The number of young freestone trees now planted is not sufficient to replace the loss that will normally occur in the old trees.

GRAPES

The probability of heavy grape production continues. With favorable weather conditions grape acreage is still large enough to produce a crop of sufficient size to cause difficult marketing conditions. It is believed that the bearing acreage of table and raisin grapes in California has passed the peak and is declining. However, additional immediate reduction is recommended. Most of the States producing American-type grapes are at present showing no tendency to increase acreage, although Arkansas has probably not yet reached its peak of bearing acreage. Growers in these States, particularly New York, Pennsylvania, Ohio, Michigan, Missouri, and Arkansas, should not plant new acreage unless they are located in districts which, because of very favorable marketing conditions such as large near-by markets and ability to market by motor truck, provide good outlets at low delivery costs.

In California the peak in the bearing acreage of juice grapes has probably not been reached and the decreases in bearing acreage of table and raisin grapes in 1930 will probably represent but a very small percentage of the total bearing acreage. The 1929 crop in California was estimated at 1,751,000 tons as compared with 2,366,000 tons in 1928. This smaller production was due chiefly to unfavorable weather conditions. As a result of the smaller production, prices for California grapes in 1929 were on a considerably higher level than in 1928, but were still unsatisfactory for most sections of the State. Where average yields were secured prices were probably sufficiently high to induce growers to take good care of their vineyards. However, these higher prices should not be construed as indicating that new plantings are warranted; in fact, considering potential production the reverse is true.

Notwithstanding much smaller production of California grapes in 1929, only fair prices prevailed during the shipping season. This indicates that the lower demand that prevailed during the 1928 season has continued. Because of the ease with which certain varieties of grapes can be used for raisins, table purposes, or juice, any substantial change in the prices of one class of grapes is likely to be reflected in the other classes.

Out of a total production of 1,018,000 tons of raisin grapes in 1929, 780,000 tons were dried for raisins. In 1928 the production of raisin grapes totaled 1,406,000 tons, of which 1,044,000 tons were dried for raisins. In 1929, 238,000 tons of raisin varieties were marketed fresh as compared with 302,000 tons in 1928 when 60,000 tons were not harvested.

The States producing American-type grapes (or so-called eastern grapes) had a smaller crop in 1929 than in 1928 and this, together with the fact that California had a much smaller production, would seem to indicate that eastern grapes should have brought considerable higher prices in 1929. As a matter of fact, eastern grapes sold at prices only slightly higher than in 1928, indicating a lower demand. Although bearing acreage in Arkansas has probably not reached its peak, it is believed that new plantings are no more than sufficient to maintain the bearing acreage which will be reached in 1930. Missouri, Michigan, and New York are, if anything, reducing bearing acreages, and, in view of the potentially large production in California, plantings other than those just sufficient to maintain present bearing acreage are not warranted.

Not only was grape production in California and Eastern and Middle Western States smaller in 1929 than 1928, but competition from other fruits was much less severe in 1929. Shipments of eight kinds of fruits, other than grapes, were about 17 per cent less from July to October, inclusive, in 1929 than they were the previous year. In view of this lighter production of competing fruits and the reduced production of grapes in 1929, and considering the rather low prices in 1929, it is evident that bearing acreage, particularly in California, must be reduced in order to secure profitable returns. The only alternative seems to be the development of a marked increase in consumption and it is doubtful if this will develop within the next few years.

STRAWBERRIES

Prospects for strawberry growers now seem to be better than in any year since 1926. With material decreases of acreage among the second-early and intermediate sections and only a moderate increase for picking in 1930 in the early States, the marketing problem should be greatly relieved this season, provided yields are not above average and the ripening periods are normal. Not only are smaller acreages in prospect for 1930 but there is a likelihood of lower yields per acre in some districts. Old fields in a number of districts are in relatively poor condition, because of drought last season and lack of care following low prices. Tentative reports indicate little change in the 1930 acreage in the late States, as compared with recent years.

Preliminary figures show a net reduction of about 16,000 acres or 8 per cent from last year's total acreage. Practically all of this reduction is indicated in four States—Arkansas, Missouri, Kentucky, and Tennessee—where about one-fourth of the commercial strawberry crop is grown and where prices have been relatively low and marketing conditions most unsatisfactory.

The indicated total of 184,000 acres for harvesting in 1930 appears to be fairly well balanced among the various producing groups. Further expansion of acreage in the early States does not seem advisable, since the price tendency has been downward during recent years when acreage was increasing. In the second-early and intermediate States, the indicated acreage for picking in 1930 should, with normal yields, result in as large a crop as can be marketed to advantage. However, in some of these States many of the old fields are now in poor condition and should be replaced with new plantings in the spring of 1930. The present acreage in the late States can well be maintained.

In the early shipping States there has been a distinct upward trend of production since 1925, and last year's record crop of 64,000,000 quarts in this group was nearly double the production of 1927. Louisiana growers, with a huge crop of 34,000,000 quarts, obtained an average price above 20 cents per quart. Florida also had a record-breaking crop and exceptionally high total returns. Greater production in all early States doubtless helped to force down the farm price to a rather low level in Alabama, Mississippi, and Texas. An increase of about 22 per cent in Florida strawberry acreage the present season may be partly offset by damage to the crop from recent low temperatures. Florida and Louisiana have so little competition in the marketing of their crops that the combined increase of 7 per cent in acreage in these most important States of the early group does not seem excessive.

Total 1929 production in the second-early States (Georgia, the Carolinas, Virginia, Tennessee, Arkansas, and southern California) was about 7 per cent below that of 1928, but the average farm price in this group declined to slightly less than 11 cents a quart, the lowest point in recent years. Peak shipments in 1929 came shortly after the middle of May, or about two weeks earlier than usual, when Arkansas and Tennessee were most active. The indicated acreage reduction this year of 26 per cent in Arkansas and 20 per cent in Tennessee should assist greatly in relieving the mid-season market congestion. For the second-early group as a whole, the indicated 18 per cent reduction of acreage is in line with previous recommendations and will place this area in far better balance than it has been in recent years. Plantings in 1930 should be only sufficient to maintain the present acreage.

Among the intermediate-strawberry States, a reduced acreage and a rather moderate yield per acre in Missouri apparently helped the 1929 situation. There was also a reduced crop in the Eastern Shore district, although some local congestions were reported during the shipping period. The average farm price of berries in this intermediate group (Maryland, Delaware, New Jersey, Kentucky, Illinois, Missouri, Kansas, Oklahoma, and California) advanced slightly to about 11 cents per quart. A net decrease of 5 per cent in production in these States resulted in a net gain of 6 per cent in the total farm value of their crop. The indicated 13 per cent reduction of acreage in this group, this season seems to be adequate.

The 1930 strawberry acreage in the late States (Pennsylvania, New York, Ohio, Michigan, Indiana, Iowa, Wisconsin, Utah, Oregon, and Washington) will apparently be maintained at last year's level. Slight reductions in Washington, Oregon, Indiana, and Ohio will be nearly offset by increases in Pennsylvania, New York, Michigan, and Iowa. This group as a whole had a successful season in 1929, averaging about 16 cents per quart to growers. The cold-pack

industry in the Pacific Northwest and Utah has shown rapid expansion. The shipping of individual packages of this frozen fruit is increasing and may, in time, compete with fresh berries from Florida.

CANTALOUPE

If growing and marketing conditions are average in the early-cantaloupe sections in 1930, an acreage equal to that of 1929 will probably result in farm prices being lower than they were in 1929. In the intermediate and the late sections a moderate decrease in acreage seems necessary if prices are to be brought to the higher level prevailing prior to 1928.

In Imperial Valley, California, which produces nearly all of the early crop and about 40 per cent of the total crop, an increase of about 15 per cent in the acreage in 1929 (to 38,360 acres), and an increase of 8 per cent in production, brought about the same farm price per crate as was obtained in 1928. This situation, however, was due to an unusually favorable combination of factors, such as scarcity of other fruits, excellent quality of cantaloupes, warm weather in eastern markets during the peak movement, and cooler weather in the Imperial Valley during the peak of shipments. This prevented a repetition of the low prices which have, in the past, resulted from large increases in acreage such as occurred in 1924 and in 1927.

Arizona and California (outside of Imperial Valley), representing almost half of the intermediate acreage in 1928, increased their plantings 15 and 18 per cent respectively in 1929 and received the lowest farm prices in recent years, averaging nearly 8 per cent below the low prices of 1928. The rest of the intermediate area, which competes only to a limited extent with the western areas, generally decreased its acreage in 1929, altogether amounting to a reduction of more than 13 per cent. Combined with lower yields, this decrease in acreage resulted in an average farm price for these other intermediate States almost one-third higher than the low price of 1928 but one-fifth below the high price of 1927. The 1929 acreage in Arizona and California (outside of Imperial Valley) was 23,600 acres and in the other intermediate States 22,310 acres.

In the late States the 21,260 acres of cantaloupes in 1929 constituted a 9 per cent increase over 1928, but was 2 per cent below the average acreage from 1924 to 1928. Colorado usually produces one-half of the late cantaloupes, but in 1929 Colorado had a very high yield per acre on an acreage 13 per cent larger than the average of the previous five years. The result was a farm price about 20 per cent below the average price for the same period. New Jersey, which ranks second in late-cantaloupe production, has been decreasing its acreage since 1926 (from 4,500 acres in 1926 to 3,300 in 1929) and farm prices have shown an upward trend since that time.

Shipments of Honey Dew and other miscellaneous melons from Western States again made substantial increases in July, August, and September, above the same months of 1928, and are increasing the competition with the cantaloupes in the intermediate and the late States.

WATERMELONS

Apparently it will be to the interest of watermelon growers to plant a somewhat smaller acreage in 1930 than was planted in either 1928 or 1929, when acreage, particularly in the early and second-early States, was at very high levels. The 1929 commercial plantings of about 204,000 acres were only about 2 per cent below the 1928 acreage which was the second largest planting since 1918. Prices to growers during the last two years have averaged about the same but were slightly below the average for the years since 1920. Prices in 1929 would have been at lower levels, as a result of the larger yields, had there not been a very favorable combination of circumstances in the marketing of the crop.

Growers in the early and second-early States, especially in Georgia and Florida where about 60 per cent of the 1929 carload shipments of watermelons originated, are very unlikely to experience a marketing situation in 1930 equal to that of 1929. Much depends upon weather conditions during the harvesting and marketing period. It is extremely improbable that the small crop of tree fruits in 1929 will be repeated in 1930, and competition from this source is almost certain to be greater. There may be less competition with small fruits in view of the reported decrease in strawberry acreage in the States which move their crop in May and June. Growers in some of

the early and second-early areas may be inclined to increase acreage in 1930, but, unless the acreage is decreased from the high levels of the last two years, prices in 1930 can reasonably be expected to decline below the level of 1928 and 1929 prices.

In the late States, the 1929 planting of about 32,000 acres was 4 per cent larger than in 1928. The total acreage in the 14 States of this group amounted to only about 15 per cent of the total commercial acreage of the entire country in 1929 and is rather widely distributed among the various States. Because of the probable decrease in demand and the increased competition with tree fruits, it would be to the interest of growers in these late States not to increase their acreage in 1930. Only in localities in which prices depend upon the local market condition and in which the local marketing situation is favorable is it likely that the acreage can be increased in 1930 to advantage.

PEANUTS

Some reduction, probably between 10 and 15 per cent, in the acreage of peanuts to be harvested for nuts in 1930 from the acreage harvested in 1929, will evidently be needed to cause any material improvement in prices, if average yields are secured. Information on stocks is inadequate, but carry-over into the 1930 season, especially of Virginia-type nuts, may be much heavier than the relatively heavy stocks at the beginning of the present season. Recent prices have probably been low enough to produce such a decrease in the Southeast. Because returns from other crops were low there is danger that the acreage will be left unchanged in Virginia and North Carolina and that it may even be increased in the Southwest. If average yields in these areas are secured in 1930 on as large an acreage as in 1929, continued low prices may be anticipated.

Prices of good-quality nuts of the Virginia type are the lowest since 1922. Prices of good-quality Spanish and Runner-type peanuts are the lowest since 1921. Because of relatively low quality, an unusually high proportion of the current crop of southeastern Runners and southwestern Spanish will be crushed for oil. The No. 2 and No. 3 grades of shelled stock, which usually amount to about 15 per cent of the production, exert a depressing effect upon the market for the better grades of shelled goods, because of the possibility of using these low-grade nuts in the manufacture of low-quality peanut butter and peanut confections. If this inferior stock were, by common consent among the shellers, sold, as available, to the crushing mills, it would not appreciably affect the market for vegetable oil, of which peanut oil constitutes but a small part of the total supply, but the use of only the better-quality peanuts in the manufacture of peanut confections and peanut butter might stimulate their consumption and thus increase the demand for peanuts.

In 1929 Virginia, North Carolina, and Tennessee, which grow chiefly the Virginia type, harvested 400,000 acres, the largest acreage on record. This was 7 per cent above the acreage harvested for nuts in 1928 and 18 per cent above the average for the five preceding years. The Virginia-North Carolina production in 1929 was also the largest on record, but the proportion of high-quality nuts was low. Storage stocks in Chicago, January, 1930, of Chinese peanuts (which are of the Virginia type) were only about one-third as large as a year earlier, but stocks of domestic Virginia-type nuts in producing sections were 10 per cent of the previous crop, or twice as large as a year earlier. Present indications are that the carry-over of Virginia nuts into the next season will be even larger than it was at the beginning of this season. In spite of the reduced carry-over of imported nuts and the small proportion of large-size nuts in the 1929 crop, prices so far this season have been much lower, extra large shelled goods in January, 1930, selling at 9 cents per pound, compared with 11¼ cents 12 months ago and 13⅝ cents in January, 1928. Planting seed of the better strains of the Virginia-type nuts should result in an increase in the production of the extra large grade and place growers in a more favorable market situation.

Imports of peanuts, practically all of which are the Virginia type, for the season ended October 30, 1929, were equivalent to only about 15 per cent of the 1928 domestic production of this type of nut, were less than half the imports of the preceding season, and the smallest quantity imported since the 1921-22 season. These imports are mostly shelled and compete directly with the largest-size domestic Virginias. Current imports for this season have so

far been negligible, and because of the present tariff rate and prevailing low prices of domestic peanuts, are not expected to be a serious market factor for the remainder of the season.

The 1929 acreage of peanuts harvested for nuts in Georgia, Alabama, Florida, and South Carolina, where both Spanish and Runner-type peanuts are grown, totaled 659,000 acres. This was the largest acreage since 1924; about 10 per cent above the already large 1928 plantings, and about 25 per cent above the average yearly acreage during the five preceding years. With a yield per acre greater than in 1928 the production was about 15 per cent greater. The heavy production, coupled with considerable damage to quality in part of this area, has brought farm prices down to a level below the point at which farmers are willing to maintain the present acreage. Judging from past reactions they will be inclined toward a reduction of about 15 per cent, which is not an excessive decrease, considering their condition. Chicago storage stocks of shelled Spanish and Runner peanuts of the 1928 crop were known to be large when the 1929 crop came on the market, and uncertainty as to the actual volume of these stocks was a factor in the low price level this season. Shellers report that an unusually large proportion of the southeastern crop will be crushed for oil; probably at least half of the Runners and several million pounds of Spanish stock. This helps to account for the present low levels of prices in that area. Such disposal of a large part of the crop may improve somewhat the marketing position and demand for shelled stock, and should at least lessen the carry-over at the close of this season. It seems probable that farmers' stock Runners will be well cleaned up before the 1930 crop comes on.

The acreage of peanuts (chiefly of Spanish type) harvested for nuts in 1929 in Texas, Oklahoma, and Arkansas, was 243,000 acres—more than double the average acreage of the preceding five years, and 30 per cent greater than that of 1928. The yield per acre for this area, however, was the lowest since 1924, and the production barely equalled that of 1928. Much of the 1929 crop was immature and damaged by weather, so that a relatively large proportion will probably be crushed for oil. If this is done, the carry-over into 1930 will be negligible compared with a carry-over last year of perhaps 10 per cent of the 1928 crop, thus improving the market position of the 1930 crop.

PECANS

The outlook is for a material increase in pecan production during the next decade. There has been heavy planting of trees of improved varieties during the last 10 years, and a large proportion of the trees of such varieties, over 10 years of age, have not come into full production. A recent survey indicates that, of an estimated total of 8,000,000 trees of improved varieties, 65 per cent, or about 5,000,000 trees, were planted during the last 10 years. Plantings during the last 5 years constitute about 40 per cent of the total number of trees of improved varieties. About two-thirds of these improved trees under 10 years of age are in Georgia, Alabama, Florida, South Carolina, and North Carolina (States listed in order of importance). These States have about 5,500,000 or 70 per cent of the total trees of improved varieties. There has also been considerable top working of seedling trees to improved varieties. Of a total of approximately 10,500,000 forest and cultivated seedling trees, 26 per cent are of nonbearing age.

Revised estimates place the total production in 1928 at 59,625,000 pounds, of which 16,988,000 pounds are improved and 42,637,000 pounds are seedling nuts. Production in 1929 is estimated at 7,426,000 pounds of improved and 30,579,000 pounds of seedlings, or a total of 38,005,000 pounds. The average yearly total production in 1925-1929 is estimated at 49,710,000 pounds, of which 11,681,000 pounds are improved and 38,029,000 pounds are seedlings. A large proportion of the seedling nuts are shelled and used by confectioners and bakers.

The extent to which the indicated increase in bearing trees will be realized and the effect on total production is problematical, but this increase in production probably will not be so large as the rapid expansion in pecan plantings in the last few years would indicate. Early optimism regarding the yields of pecans that may be expected, has been tempered by the hazards incident to the production of the crop. There has been some improvement in cultural practices, in the control of insect pests and fungous diseases, and in shift toward the better commercial varieties, but there is still much to be learned.

Some individual growers have obtained profitable average yields, but there are many who have not been so successful. A study of the yields obtained

in 1928 from 75 representative orchards 15 to 19 years of age selected at random in commercial-producing areas east of the Mississippi River, showed an average of 145 pounds per acre. Thirty-two of these orchards having 72 per cent of the entire acreage had a yield of 160 pounds or less per acre; 22 orchards having 21 per cent of the entire acreage had a yield of from 161 pounds to 360 pounds per acre; while 21 orchards having only 7 per cent of the entire acreage had a yield of over 360 pounds per acre. The average per orchard was 103 acres for the first group, 43 acres for the second, and 14 acres for the third.

Another phase of the 1928 survey covering 920,000 trees of improved varieties, 10 years old and over, indicated a yield of approximately 6 pounds per tree. On a basis of 17 trees per acre, a yield of approximately 100 pounds per acre would be indicated in a year considerably above average in production. However, although all these trees were over 10 years of age, 82 per cent were under 20 years and probably had not reached full production.

Growers who contemplate new plantings should exercise care in selecting suitable varieties and locations in order to minimize the risks incident to such a long-time investment. Growers in most sections should be in a position to finance the development for a period of at least 10 years before expecting production of any consequence.

From the marketing standpoint it appears that there is room for considerable expansion before the potential demand is satisfied. A recent marketing survey indicates that probably less than one-half of the retail grocery stores in the United States carried unshelled pecans at any time during the 1928 marketing season. For the 5-year period, 1924-1928, inclusive, the total per capita supply of pecans in the United States on an unshelled basis has averaged around 0.41 pound, compared with 0.73 pound for almonds and 1.09 pounds for English walnuts. Pecans reaching the consumer in the shell have probably averaged less than one-sixth of a pound. Probably 80 per cent of the annual retail sales of unshelled pecans are made during the period from the arrival of the new crop in November to the end of December.

There has been a slight downward trend in prices of improved pecans during the past five years and some further reduction can be expected as production increases. In addition, a considerable increase in the production of English walnuts is expected. Of a total of 127,480 acres in California 31 per cent is classified as of nonbearing age and of 6,000 acres in Oregon more than 50 per cent is of nonbearing age. On the other hand, there is no indicated increase in the production of almonds during the next few years.

Pecan production is confined to North America and the foreign trade is now relatively unimportant. In recent years annual imports of seedling pecans from Mexico have averaged less than 1,000,000 pounds. Objections of the trade to these imports have been due not so much to the quantity imported as to the low average quality of these nuts and their effect on consumption.

Because of competition from cheap European walnuts, filberts, and almonds, it is unlikely that any significant foreign demand could be developed at the present prices.

CLOVER AND ALFALFA SEED

A larger surplus of domestic red-clover and alsike-clover seed than in recent years is expected after the sowing requirements this spring have been met. The relatively high prices and lack of a heavy surplus of alfalfa seed indicate that the present acreage of this crop, particularly in northern-producing districts, should be maintained. On the other hand, continued low prices of sweetclover, carry-over of old seed, and lack of evidence of an increased demand suggest that a reduction in the acreage of this crop for seed be made this year.

Growers should not be unduly influenced by prevailing low prices for red-clover seed in determining the acreage they will cut for seed next fall because higher prices at that time could normally be expected. During the past 10 years there have been seven small crops of red-clover seed and conditions resulting in the large production of 1929 are not likely to be repeated this year. In recent years there has been a pronounced preference of farmers for domestic seed, which makes competition from relatively cheap imported seed of less significance than in the past. Therefore it would seem highly desirable to forestall, if possible, a recurrence of shortages in supplies of domestic red clover, such as have been noted frequently during the last decade.

One of the largest red-clover seed crops on record was harvested in 1929 because of a marked increase in acreage in most of the principal producing

States. Yield per acre was about average. Total production of red and alsike clover seed was about 129,420,000 pounds, compared with 57,660,000 in 1928 and 68,439,000 pounds, the average annual production for the preceding five years (1923-1927). Imports of red-clover seed have been much below normal and for the fiscal year ended June 30, 1929, amounted to 7,547,000 pounds, compared with average annual imports of about 11,000,000 pounds. Prevailing wholesale prices for red-clover seed, at the lowest level since 1921, are lower than last year by about \$11.50 per 100 pounds (35 per cent) and are lower than the average at a corresponding date for the past five years (1924-1928) by about \$10.50 (33 per cent). Growers may well reserve an extra year's supply from the present crop, and farmers who are required to buy seed may find it profitable to buy two years' requirements at prevailing low prices.

The 1929 alsike-clover seed crop was nearly twice as large as the 1928 crop, which was the smallest in seven years or more. Imports for the last fiscal year ended June 30, totaling 4,797,900 pounds, were about 35 per cent below the average of the year before and 45 per cent below the average for the preceding five years. Imports since July have been larger than last year but smaller than two years ago and than the average for the period July 1-January 15. Prevailing prices are the lowest since 1924 and average about \$13.50 (39 per cent) lower than a year ago and \$6 (22 per cent) below the 5-year average.

Although the 1929 crop of sweetclover seed was only slightly larger than the 1928 crop, growers are again cautioned not to increase their acreage. Production for a number of years has been running ahead of consumption, resulting repeatedly in large carry-overs and low returns to growers. Prevailing wholesale prices, the lowest on record, are nearly 10 per cent below last year, and 35 per cent below the average for the past five years. Doubtless low prices to growers for three consecutive crops will discourage many from harvesting a seed crop this year unless storms and early frosts should greatly reduce yields in the heaviest producing districts and raise prices sharply. Since July 1 imports have been unusually small—much below the average—and are expected to continue small for the first half of this year, or longer.

Alfalfa-seed production in 1929 was increased about one-fourth or one-third over the relatively small crop of 1928, but most of it will be needed to meet the spring and fall seeding requirements. On the other hand, carry-over is considerably smaller than last year although the fall demand was generally disappointing. Because of unfavorable climatic conditions last fall, much of the acreage intended to be sown at that time will undoubtedly be sown to alfalfa this spring or next fall, and thus offset in part or entirely a possible curtailment in the demand for alfalfa seed because of relatively low clover-seed prices. Imports (1,146,400 pounds) for the past fiscal year were larger than last year, but were about one-sixth the average for the preceding five years (1923-27). Wholesale prices are about \$2 per 100 pounds (8 per cent) lower than a year ago, but \$3.30 (16 per cent) higher than the average for the preceding five years.

TOBACCO

The outlook for cigar types continues favorable, although further increases in acreage do not appear to be advisable except in Havana Seed and possibly New England shade-grown. Increases in acreage seem justified in Virginia fire-cured and Maryland, as stocks are relatively low and demand is good. Acreage about the same as last year is recommended for Henderson stemming, Green River, and Virginia sun-cured, whereas decreased acreage is recommended for flue-cured, Burley, One-Sucker, and Kentucky and Tennessee fire-cured of types 22 and 23.

Increased consumption of cigarettes in this and foreign countries has resulted in an increasing demand for flue-cured Burley and Maryland tobacco. In the case of Burley, this increase is partly offset by a decreased demand for chewing and smoking tobacco. Demand for cigar tobacco has not materially changed in recent years. Demand for most other types has declined for several years and some further declines appear probable. Demand for tobacco appears not to be materially affected by changing business conditions.

FLUE-CURED TOBACCO, TYPES 11, 12, 13, AND 14

The present outlook for flue-cured tobacco is only fair. Demand is expected to maintain the average rate of growth of recent years, but the supply may

increase more than enough to offset this growth. Domestic consumption and exports of flue-cured tobacco have increased rapidly during recent years. Cigarette consumption has maintained an increase of approximately 10 per cent per year. Since 1925, approximately one-half of this increase has been reflected in the increased consumption of flue-cured tobacco. Domestic consumption of flue-cured tobacco for the year ended June 30, 1929, is estimated at 302,000,000 pounds compared with 288,000,000 for the year ended June 30, 1928, and 265,000,000 for the previous year.

Exports of flue-cured tobacco also have increased rapidly during recent years. For the year ended June 30, 1929, they amounted to 414,000,000 pounds compared with 329,000,000 for the year ended June 30, 1928, and 289,000,000 for the previous year. Exports for the five months, July to November, 1929, were slightly smaller than during the corresponding months of the previous year, but exports to the most important importing countries, except China, have materially increased. Exports to China were exceptionally heavy during the first part of the 1928 marketing season, because of anticipated increases in import and excise duties, and were lighter than usual during the remainder of the year. The outlook for exports to China, however, has been made uncertain by the recent drastic slump in Chinese exchange. On the other hand, the production of tobacco similar to our flue-cured has received a severe setback in British colonies, and the threat of important competition from that source, mentioned in former outlook reports, has been temporarily abated. Present indications are that the total exports this season will compare favorably with those of last season.

As a result of the increasing foreign and domestic consumption, it is reasonable to expect that disappearance during the year ending July 1, 1930, will total close to 750,000,000 pounds compared with 716,000,000 pounds the previous year, in which case the stocks on hand in this country on that date will be approximately 600,000,000 pounds compared with 590,000,000 pounds on July 1, 1929.

The acreage planted in 1930 will probably show an increase. Acreages of type 11 grown in central and north-central North Carolina and southern Virginia, and type 12 grown in eastern North Carolina, will probably be maintained or slightly increased over that of 1929. Acreages of type 13 grown in South Carolina and southeastern North Carolina and type 14 grown in Georgia and Florida will probably be materially increased over those of 1929. An increase of 10 per cent for the entire flue-cured area would result in approximately 1,250,000 acres, which, with yields equal to the average of the last five years, would produce approximately 840,000,000 pounds. This, added to a probable carry-over of 600,000,000 pounds, would result in a total supply of 1,440,000,000 pounds, or nearly 100,000,000 pounds greater than the supply of the present season. A total supply in excess of 1,400,000,000 pounds would probably result in prices less favorable than those of the 1928 and 1929 seasons, unless a crop of exceptional quality is produced. Prices above 20 cents a pound are not likely to be obtained for the 1930 crop unless production is below that of 1929.

VIRGINIA FIRE-CURED, TYPE 21

Growers of Virginia dark fire-cured tobacco apparently will occupy a favorable situation in 1930. Stocks on October 1, 1930, are expected to be the smallest since reports were first issued in 1912. Exports of this type have gradually declined, although the total for 1929 will probably exceed that of 1928. Domestic consumption has increased somewhat. Favorable prices appear probable for the 1930 crop, provided the acreage increase does not exceed 15 per cent. Expansion should be restricted to soils suitable for producing high-grade tobacco. In analyzing the prices received for the 1928 crop growers should not overlook the fact that the quality was unusually good.

CLARKSVILLE AND HOPKINSVILLE, TYPE 22, AND PADUCAH, TYPE 23

The outlook for western Kentucky and Tennessee fire-cured tobacco is unfavorable, and a reduction in acreage is recommended. The production of these types gradually diminished from 1919 to 1927, the production in the latter year being 81,000,000 pounds compared with 234,000,000 pounds in 1919. Because of decreasing foreign demand prices declined during this period, and returns to growers were unusually low in 1925 and 1926. The small crop of 1927, 81,000,000 pounds, sold at higher prices, and production increased to

104,000,000 pounds in 1928 and to 139,000,000 pounds in 1929. The foreign production of tobacco which competes with the lower grades of American fire-cured types increased markedly from 1919 to 1925 and has been maintained at about the 1925 level.

Exports of these types have continued to decline, but we may now be near the low point, and the exports in 1930 may slightly exceed those of 1929. But this increase, if it occurs, is not likely to be great enough to offset the larger crop of the present season, and stocks are expected to be materially larger on October 1, 1930, than a year earlier.

Under these conditions a crop as large as that of 1929 and of average quality would result in lower prices. Prices comparable with those of 1927 and 1928 are not likely to be received unless the acreage is reduced as much as 10 per cent. Growers are again advised to give more attention to the growing of high-grade tobacco and properly curing their crop.

HENDERSON STEMMING, TYPE 24

The outlook for Henderson stemming tobacco is fairly favorable, provided acreage is not increased. The disappearance for the year ended October 1, 1929, is larger than the total supply of the present season, but the general trend of disappearance of this type is downward. In view of the depletion of old stocks production equal to that of 1929 would probably result in prices about the same as those now being paid.

BURLEY, TYPE 31

Burley prices are likely to be lower in 1930 than in 1929 if the present acreage is maintained. Because of low production there has been, in recent years, a downward trend in stocks of old leaf, resulting in improved prices to growers. This general movement culminated in 1928 when stocks reached the lowest level in six years and prices reached the highest point since 1919. The heavy production of 1929, which exceeds by 15,000,000 to 20,000,000 pounds the normal annual consumption of Burley tobacco, will have the effect of increasing the carry-over of October 1, and its effect in lowering prices is already noticeable.

In past years there has been a marked tendency for production, stocks, and prices to move in cycles, and the year 1929 appears to be on the down swing of a new price cycle. Under similar conditions in former years farmers have continued to increase acreage in spite of decreasing prices until the average price has fallen well below 20 cents per pound, with the result that stocks have become top-heavy at about the same time production has reached its highest point, resulting in disastrously low prices. This was the situation in 1926 when prices dropped to 13.1 cents per pound from 19 cents the previous year. In the past growers have delayed adjustment of their production program until after the year of low prices instead of looking ahead and forestalling the arrival of low prices. It is apparent that unless Burley growers adjust their production to normal consumption requirements history will repeat itself and the next two or three years are likely to witness expanding production, increasing carry-over, and declining prices.

It is important that Burley growers keep in mind the following facts: Acreage in 1929 was 24 per cent greater than in 1928. Because of low yields, however, production was only 16 per cent greater, or about 314,000,000 pounds, compared with 270,000,000 pounds in 1928, and, as a result, 1929 prices are about 6 cents a pound lower than those of 1928. Had yields been equal to the average for the past five years, production would have been about 343,000,000 pounds, and the decline in prices would have been still greater.

Low yields and low stocks ameliorated the effects of overplanting in 1929. In 1930 not only are stocks on October 1 expected to be 15,000,000 to 20,000,000 pounds higher than on last October 1, but the average yield per acre is likely to be much higher. The danger in the present outlook, therefore, is that with the same acreage in 1930 as was harvested in 1929 the total supply next fall will be fully 40,000,000 pounds in excess of the present supply, resulting in further, and possibly greater, declines in price. Considering the probable increase in stocks, an acreage 10 to 15 per cent smaller than that of 1929 with average yields would probably result in a total supply approximately equal to that of the present season.

MARYLAND, TYPE 32

The outlook for Maryland United States, type 32, is favorable. Demand for this type appears to be increasing, and good prices have been received in recent years. Present stocks are relatively low and an increase in acreage from 10 to 15 per cent appears to be justified.

ONE-SUCKER, TYPE 35

The outlook for One-Sucker is not favorable. Production has increased during the last two years, as a result it is expected that stocks on October 1, 1930, will be larger than those of October 1, 1929. The trend of consumption of this type is downward, and will probably continue downward. A gradually decreasing scale of production is therefore needed to avoid unprofitable prices.

GREEN RIVER, TYPE 36

No increase in acreage of Green River appears desirable in 1930. Although at present the export demand appears somewhat improved over that of a year ago, this is probably more than offset by the decreasing domestic requirements for dark air-cured types. Low production in 1927 and 1928 reduced old stocks, but the 1929 crop appears to be fully equal to requirements. An increase will result in lower prices to growers unless a crop of exceptional quality is produced.

VIRGINIA SUN-CURED, TYPE 37

Although the prices being paid for this type of tobacco are higher than for the crop of 1928, the increase is due to the higher quality obtained in 1929, and does not reflect a stronger demand. Disappearance for the year ended October 1, 1929, was the smallest yet recorded, and in line with the downward consumption of chewing types in general, demand for this type will probably continue to decline. If acreage is increased in 1930, lower prices are likely to result.

CIGAR TYPES

The total supply of cigar tobacco on October 1, 1929, was 1 per cent less than a year before. The old crops have passed almost entirely into manufacturers' hands. The higher prices generally received by growers for the 1929 crop have been, in a large measure, due to the smaller proportion of stemming grades, rather than to a marked improvement in demand. Abandonment due to hail damage has reduced the crop and contributed to the improved price situation. Withdrawals of cigars during the first 11 months of 1929 were 1 per cent greater than during the corresponding period of 1928. Consumption of 5-cent cigars showed further increases, but consumption of higher-priced cigars continued to decline.

PENNSYLVANIA SEEDLEAF, TYPE 41

The outlook for this type is favorable, provided the acreage is not increased. The yield per acre in 1929 was the lowest since 1913. An average yield on acreage equal to that of 1929 would result in a crop larger than the consumption during either 1928 or 1929. If, however, the present rate of increase in the consumption of 5-cent cigars continues, such a crop with average quality would probably result in prices comparable with those of 1928.

MIAMI VALLEY, TYPES 42, 43, AND 44

The outlook for these types appears favorable, provided the acreage is not increased. Consumption was greater for the year ended October 1, 1929, than during the previous year and has exceeded production during five of the last six years. The acreage in 1929 was 16 per cent larger than in 1928. Although the yield per acre was unusually low last year, the crop was about equal in size to the average of the last five years. An acreage the coming season equal to that of 1929 with average yields would result in a crop smaller than the consumption during either 1928 or 1929. Stocks on October 1 last were the lowest on record, and the indications are that the present acreage may safely be maintained.

GEORGIA AND FLORIDA SUN GROWN, TYPE 45

Farm prices for this type have not changed materially during the last three years. Most of this tobacco is contracted for before it is planted. No reason is apparent for any marked change in the acreage.

CONNECTICUT VALLEY BROADLEAF, TYPE 51

The outlook for this type is favorable for an acreage about the same as that planted in 1929. However, with a normal season, repetition of the 1929 prices is not to be expected in 1930. The high prices realized by growers in 1929 were due partly to the low production caused by losses from hail and to the small proportion of stemming grades. The consumption shows a marked downward trend but exceeded production slightly last year. Stocks on October 1 next will probably be the smallest in recent years. Because of the shortage of high-grade binders, good quality Broadleaf will probably be in strong demand next season.

CONNECTICUT VALLEY HAVANA SEED, TYPE 52

The outlook for this type is favorable provided growers avoid a large increase in acreage such as might reasonably be expected to follow the high prices of 1929. The 1929 prices were influenced largely by the small proportion going into stemming grades. This situation is unlikely to be repeated in 1930. The annual consumption of this type shows an upward trend and has exceeded production during each of the last four years with the result that stocks are the lowest in recent years. An average yield on an average equal to that of 1929 would result in a crop smaller than the average consumption during the last six years and should result in profitable prices to growers. The market for high-grade binders is expected to be good.

NEW YORK AND PENNSYLVANIA HAVANA SEED, TYPE 53

The outlook for this type is favorable. In view of the decreasing stocks of binder tobacco, prices are not expected to be lower than in 1929, unless a material increase is made in the production of this or related types.

WISCONSIN, TYPES 54 AND 55

The outlook for these types is favorable for a crop of about the same size as that produced in 1929. Indications are that the supply of good binder tobacco will be small at the beginning of the next marketing season. Stemming tobacco is at present in good demand because of the small proportion of the 1929 crop going into grades used for stemming purposes. Since this unusual condition is unlikely to recur next fall and winter, the demand for stemming tobacco may be less favorable than at present.

CONNECTICUT VALLEY SHADE GROWN, TYPE 61

The acreage of this type has expanded rapidly since 1925. Although the 1929 crop exceeded consumption during the year ended October 1, 1929, it seems to be in good demand at prices slightly higher than those of a year ago for the better grades. A further increase in acreage seems likely to occur and a moderate increase is probably justified by demand conditions.

GEORGIA-FLORIDA SHADE GROWN, TYPE 62

A further slight increase in the acreage of this type seems to be justified if it can be grown profitably at present prices. It appears to be finding favor among manufacturers and there is no reason to anticipate any slackening of demand.

SUGAR

World sugar production probably will continue large and prices relatively low but apparently the tendency to increase production has been checked and some slight improvement in prices is in prospect. World production in the current season (1929-30) may be slightly less than that of the past season, but any decrease will be partially offset by the larger stocks at the beginning of the season. The prospect for reduction is in cane-sugar production. The world beet-sugar crop appears to be about equal to that of a year ago. According to present prospects Cuba, Java, and India have smaller crops.

Reports to date indicate that the world raw-sugar production for the present season may be about 3 per cent below the record crop of last season but still 4 per cent above the 1927-28 crop. The record of stocks is not complete but available data indicate an increase not quite equal to the prospective decrease in production. In the meantime, world consumption has continued to increase. World consumption for last season has been estimated at about 30,000,000 short tons as compared with over 28,000,000 in the previous season. This increase in consumption was partly due to lower prices.

World expansion in the production of both cane and beet sugar appears to have been checked temporarily at least. European beet acreage increased rapidly after the World War, reaching a peak in 1928. The area outside of Russia in 1928 was more than 20 per cent greater than before the war. Russia has recovered its average pre-war area in sugar beets. The area of beets now being harvested in Europe is slightly less than that of 1928. This reduction may prove to be only temporary or it may mark a check in the European expansion of beet-sugar production.

The outturn of the Cuban crop is still somewhat uncertain but a reduction is expected on account of deficiency in rainfall and curtailment of planting. The several measures which have been taken by the Cuban Government to hold production in check probably have restricted new planting, which will for a time check Cuban expansion in production and may even curtail it temporarily.

Acreage devoted to sugarcane in Java has not shown any noticeable change in the last few years. The plantings of the new high-yielding cane have gradually increased, and it is estimated that about 90 per cent of the total acreage is now devoted to this variety, but the Java crop is estimated to be somewhat less than the record crop of last season. The crop of British India is also somewhat less than last year.

It appears, therefore, that the tendency to increase foreign production of sugar has been checked temporarily at least, and that this, together with increasing demand, will, under favorable economic conditions, tend to improve the market for the sugar producers of the United States.

Porto Rico has practically recovered from the hurricane and production in Hawaii and the Philippines continues on about the same level as last year.

HONEY

In most sections of the country bees are supplied with ample stores of honey for the winter, and prospects are for lighter winter loss than usual. Supplies of honey from the 1929 crop are light in all sections except portions of the clover belt and the Southeast, and little carryover into the 1930 season is anticipated. The January outlook, based upon the conditions of bees and honey plants and the amount of moisture in the ground, is for a honey flow in 1930 fully equal to the average of recent years. Demand for honey is increasing, partly because of greater publicity by manufacturers of food products in which or with which honey is used, as well as by honey packers.

The 1929 crop is well cleaned up in California, where recent rainfall has broken a serious drought condition, and where the outlook is for a fairly good crop if average moisture conditions prevail during the next few months. In the Intermountain States, following a short crop in 1929, plant prospects suggest a larger honey flow next season. Throughout the clover belt, as a whole, apparently a good crop can be expected if there is no serious winter killing. Honey prospects in the Southeast and the Southwest are normal and are better than they were a year ago.

Compared with a year ago, prices of extracted honey in January, 1930, are higher in California, about the same in the Mountain States and through the clover belt, and slightly lower over much of the South.

Total exports for the 12-month period ended November 30, 1929, were slightly less than 10,000,000 pounds, or more than 10 per cent under the total for the preceding 12 months. It is believed that the decrease in shipments was primarily due to the higher prices asked for the honey earlier in the season. The recently enacted law, effective December 31, 1929, raising the import duty on honey going into Germany from 4½ cents per pound net to 7 cents per pound gross, is likely to curtail shipments to Germany appreciably, as is the relatively large 1929 German crop of honey. Exports to other countries were well maintained during the past year.

